

**THE DEVELOPMENT OF AN IMMUNIZATION TRAINING PROGRAM TO
IMPROVE CHILDHOOD IMMUNIZATION RATES IN LOW-INCOME FAMILIES**

by

Amanda W. Cooper

JO ANN RUNEWICZ, RN, MSN, EdD, Mentor

JANET HAYHURST, EdD, Committee Member

LUNEDA BROWN RN, MSN, Preceptor

Patrick Robinson, PhD, Dean, School of Nursing and Health Sciences

A DNP Project Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Nursing Practice

For submission to *Public Health Nursing*

Capella University

October 2016

Abstract

Objective: The purpose of this study was to assess knowledge levels regarding childhood immunizations among low-income parents in an effort to improve the immunization rate of 19 to 35 month old children.

Design and Sample: Participants (n=36) were administered a pre- and post-test questionnaire asking for correct identification of vaccine needs of children 19 to 35 months of age.

Measurements: Descriptive statistics and McNemar's test were used to answer the PICOT question and define the sample.

Intervention: A QI project using the Plan-Do-Study-Act (PDSA) cycle was implemented in a public health department care setting in Georgia to provide childhood immunization training for low-income parents.

Results: Thirty- six parents were enrolled in the program; all were mothers. Only 26.6 % (n= 9) of the mothers displayed adequate immunization knowledge and practice scores before the program. After the implementation of the training program, 73.4% (n=27) of the mothers displayed adequate knowledge and practice scores. The 4:3:1:3:3:1:3 vaccination series immunization rate for children 19 to 35 months of age remained at 46% for the county.

Conclusion: An immunization training program on childhood immunization for parents within a low-income community, had a positive change in their knowledge related to childhood immunization in comparison with the baseline results.

Key words: *Quality Improvement; Immunization; Children; Parents; Knowledge; Practice; Attitude; and Training Session.*

Background

Immunizations are responsible for saving the lives of more children during the past 50 years than any other medical intervention. Immunizations are harmless, simple, and one of the greatest economical approach for saving and improving children's lives all around the world (Mereena & Sujatha, 2014). Luthy, Beckstrand, and Callister (2010) emphasized that childhood immunization is an essential and active approach for reducing childhood death and disease. Despite this fact, according to an immunization state registry report, there are children in a county in Georgia who have not received the vaccination series as recommended by the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics. This may be due to a lack of parental knowledge as to why immunizations are essential to the health and well-being of their children. (Georgia Department of Public Health, n.d). This project attempted to answer the question: In parents with a low-income level, how does a specialized immunization training program influence parental knowledge and vaccination rates of children aged 19 to 35 months of age over one month?

Problem Description

In this community in Georgia, only 46% of 19 to 35 month old children from low-income families were fully immunized with the recommended 4:3:1:3:3:1:3 (4 diptheria, tetanus and pertussis (DTaP); 3 Polio; 1 measles-mumps-rubella (MMR); 3 *Haemophilus influenza* type b (HiB); 3 hepatitis B (HepB); 1 varicella (Var); and 3 pneumoccal conjugate vaccine (PCV) vaccination series in 2014. This rate is below the 54% immunization rate for the state. A community health department in this community, where low-income families receive health services as well as immunizations, has no formal specialized immunization training program to improve childhood immunization rates or to address parental concerns regarding childhood

immunizations. It is estimated that in this community, only 21.20% of adults between the ages of 18 to 64 possess minimal literacy skills (the ability to read to understand brochures or educational material). It can be postulated that based on the National Assessment of Adult Literacy (National Center for Education Statistics, n.d.) that the current immunization information handout provided by this community health center is not being read and understood by parents of these children because of their low literacy skills.

Available Knowledge

Immunization education can help decrease parents' misunderstandings and myths against immunizations and consequently increase the rates of immunizations (Alberta Immunization Strategy, 2007-2017). Parental understanding and practices concerning immunization contribute to their decision to immunize their children (Al-lela et al., 2014 & Bernsen et al., 2011). Public health nurses (PHNs) are significant in making sure parents receive accurate information regarding precautionary care practices such as immunizations (Luthy et al., 2010). A quality improvement (QI) program geared to the literacy levels of the low income families will facilitate parental knowledge and understanding of routine childhood immunizations in this community.

Al-lela et al. (2014) conducted a mixed method (retrospective cohort and a prospective cross-sectional) study on 528 randomly selected Iraqi children to assess the relationship between parental knowledge and immunization practice. The outcome of this study discovered that only half of the children were vaccinated with all the recommended vaccines. Only 66 % of the parents demonstrated sufficient knowledge and practice related to childhood immunizations. The conclusion of this study indicated that forthcoming efforts are necessary to increase parental knowledge and practice supporting childhood immunization practice. These findings were consistent with a study conducted in the United States by Saeterdal, Lewin, Austvoll-Dahlren

and Munabi-Babigumira (2014) which indicated that interventions designed for communities to train and educate about childhood immunization have the potential of improving attitudes concerning immunization and most likely will increase immunization rates. Another study conducted by Luthy et al. (2010) suggested that it is essential for health care professionals to evaluate and improve parental knowledge related to childhood immunizations. The study's conclusion indicated that the periodic evaluation of immunization rates and the utilization of training programs for parents were found to increase parental, knowledge and immunization practices.

Formal Model

The Iowa Model of Evidence-Based Practice to Promote Quality Care (better known as the Iowa Model (Titler et al., 2001) was used effectively to develop this immunization training program for parents. The Iowa Model provided a step-by-step guide that provided the framework for taking a clinical problem (low childhood immunization rates) and matching it with an intervention built on research to establish an organizational practice at the county health department. As emphasized by Brown (2014), focusing on the process of developing and evidence-based change, the Iowa Model helps nurses, as well as other health professionals transform research results into clinical practice and improves results for patients.

Assumptions

Selecting an appropriate sample to work with ensured a high level of accuracy and reduced bias in data collection. The assumption that the sample comprised of parents who had at least one child not completely immunized was used to develop the intervention. All low-income parents of children who received services at this health department, especially parents with children within the 19 to 35 months old age group were invited to participate. Convenience

sampling was the method used for this study. The subjects were chosen based on their ease of access. This convenience sample consisted of a group of low-income parents at a public health department.

Educating parents on the significance of childhood immunizations is essential in an effort to allow parents an opportunity to make knowledgeable choices concerning the vaccination of their children. Public health nurses can influence the rate of childhood immunizations within their community by considering specific concerns of parents and facilitating communication through training. Side effects of immunization, safety, and the effect on the immune system are common parental concerns and should be addressed (Luthy et al., 2010). This QI project to increase immunization rates for 19 to 35 months old children was based on the Centers for Disease Control and Prevention's Task Force on Community Preventive Services recommendations.

Specific Aims

The specific aims of this intervention were twofold. The first aim was to increase the immunization rates of 19 to 35 month old children. In order to increase the immunization rates, it was necessary to assess parental knowledge and practices related to childhood immunizations. According to Awadh et al. (2014), an important predictor factor of a child's immunization status, depends upon the parents' knowledge related to immunization. The second aim of this intervention was to provide accurate, evidence- based practice (EBP) immunization information to parents in an attempt to improve the immunization rates for 19 to 35 month old children in a low-income population. Luthy et al. (2010) commented that diminishing immunization rates as having a substantial impact directly on the health care system and the health care team, particularly for nurses. It was further emphasized that healthcare providers are in an ultimate

position to deliver correct immunization information and to definitely effect compliance, and healthcare providers also have a strong effect on whether parents have their children immunized.

In a discussion with the health department nurse manager and nursing staff, a great amount of concern was discussed in reference to the county below state level immunization rates of children in the age range from 19 to 35 months. The declining immunization coverage of children 19 to 35 months of age were confirmed as a main health concern for this county (Georgia Department of Public Health, n.d., p.11). In an attempt to reduce vaccine preventable diseases and death, immunization rates for children between 19 to 35 months old were targeted for improvement in this community. The CDC (2015) commented that a specific concern about United States (U.S.) immunization levels and areas for further study involving childhood immunizations are still suboptimal. For example, in 2011, only 84.6% of these children were administered four doses of the DTap vaccine. Newborn infants are safe to numerous diseases because of the antibodies that are delivered to the baby from the mother. Nevertheless, the length of this immunity may last only from a month to less than a year. Unfortunately, there is no maternal protection for diseases such as whooping cough. Immunizing children helps to protect not only the child, but the health of the community as well.

Methods

Design and Sample

A small rural public health department was the setting for this community based immunization training program for parents. This setting is suitable because it is the site where maternal and child care services are provided and includes special immunization services that provides education for parents and helps to prevent early childhood diseases. In addition, this rural public health department also provides the services of Women, Infants, and Children (WIC)

health and nutrition services that encourage wellness for women, infants, and children from birth to five years of age. Children First, another service offered at this site, is a health service for the health management for children from birth to three years of age who are in jeopardy for ill health and development. Furthermore, health promotion for all citizens of this community is met by the provision of excellent, effective, and measurable health services by working together with community associations and agencies. Personal and community based services and education are provided at this setting as well as the distribution of wellness and health information.

This quality improvement plan was comprised of a step-by-step methodology which included the problem identification, etiology, and strategies to effectively manage and resolve the problem of low immunization rates in this community. In addition to the Iowa Model, the Plan- Do- Study- Act Study (PDSA) cycle also provided the framework for the development of this QI project. The QI project plan provided the program design and prepared the DNP learner and the health department nursing staff for evaluating the success of this immunization plan. The PDSA Model is a modest, but influential instrument for increasing quality improvement (Agency for Healthcare-Research and Quality, 2013).-The four steps of the PDSA cycle are:

- Step 1: Plan--- Plan the change or examine how something operates;
- Step 2: Do---Formulate and implement the plan;
- Step 3: Study: Evaluate the outcomes; and
- Step 4: Act----Decide what actions should be taken to improve (AHRQ, n.d., p. 1).

The first step (**Plan**) of this project was to inform the health department staff (nursing and medical officers) that there was a need to develop an evidence- based practice (EBP) QI plan to increase the immunization rate in the area. These individuals received an in depth explanation of the significance of the project as it relates to the health of community, and elicited their interest

in participating in the project in improving childhood immunization rates for this community. A staff meeting was specifically scheduled to discuss this project.

This program focused on one of the 13 educational interventions to improve immunization rates suggested by the Centers for Disease Control and Prevention's Task Force on Community Preventive Services (2012) so that it will be sustainable over time. Once the planning process was completed, a comprehensive quality improvement program to increase childhood immunization rates was developed that will be managed by the trained staff. This QI project (**Plan**) included a pre-implementation questionnaire to assess parental knowledge, attitude, and practice regarding childhood immunization as a baseline for implementation. The questionnaire was comprised of 20 questions: 10 on attitude and practice and 10 on immunization knowledge. Permission was granted by the author of this questionnaire so that it could be used in this QI project (O. Al-lela, personal communication, April 29, 2015). In the second stage (**Do**), the DNP learner implemented this questionnaire after a four- hour training session. Three learning modules were presented via PowerPoint (PPT): Module 1-vaccine preventable diseases; Module 2 -vaccine endorsement; and Module 3 - vaccine fears for the purpose of educating the parents of low income families. This was to ensure that the parents were provided with accurate and evidence based information on the CDC recommendations for immunizing children between the ages of 13 to 19 months against vaccine preventable diseases. The third stage (**Study**) involved observation of the projected QI plan that was implemented. The same questionnaire was administered to the parents after the teaching of the modules in order to assess the changes in parental knowledge, attitude, and practice regarding childhood immunizations. In the final stage (**Act**) of the project, immunization rates were monitored after the implementation of the training program using GRITS over a period of one month to

determine whether the goal of 80% of 19 to 35 month old children residing in the county were fully immunized. The work with the health department nursing staff continued until the conclusion of the project. At the conclusion of the project, the immunization training program was presented to the health department district manager for consideration of the adoption of the program.

Study of the Intervention

This project sought to answer the question: In parents with a low literacy level, how does a specialized immunization program influence immunization rates of children 19 to 35 months of age over one month? Questions that the study of the intervention was designed to answer included:

- By what percentage did the immunization rate increase as a result of the training?
- Did the parents have any negative attitudes toward immunization at the end of the training?
- What programs can the public health sector adopt to ensure people in low-income families access vaccines?

This QI plan was needed to improve the immunization rates for 19 to 35 month old children residing in a rural community. Immunization rates can be improved by immunization programs that increase parental knowledge through education of the risks and seriousness of contracting vaccine preventable diseases. The planned intervention was to improve childhood immunization rates through a QI plan focusing on an immunization training program for low-income parents that receive services at this health department. The desired state and expected outcome of implementing an immunization training program was to improve parental awareness

related to childhood immunizations. This will be an effort to increase the immunization rates for children 19 to 35 months old from 46% to 80% and above within the community.

A step by step methodology to the implementation of this program created a solid roadmap for a successful program. Awadh et al. (2014) emphasized that educational programs intended for parents can have significant effects for improving immunization acceptance. Initial plans for how the intervention was implemented:

1. Met with the health department's nursing staff to discuss the proposed project;
2. Obtained support and cooperation from the health department's nursing staff by describing the project in detail and by providing information that the project was based on scientific evidence;
3. Developed learning modules;
4. Selected immunization coordinator as champion;
5. Performed four hours of in-service training for nursing staff on implementing the program; and
6. Presented project to health department district manager for adoption.

The health department nursing staff was assisted in establishing a plan to initiate an immunization program and for conducting periodic assessments of immunization rates and parental attitudes, as well as ongoing educational programs to facilitate parental understanding of childhood immunizations and the prevention of communicable diseases. The appointed champion worked with the advertisement of the training program, which involved displaying posters with information about the immunization training program in the lobby and in the exam rooms three weeks prior to the expected date of the program. In addition, the champion also assisted with the development of the learning modules and PPT presentation slides, and

facilitated the coordination of the pre and post immunization data extracted from the state registry. The champion will support the continuation of the immunization training session through periodic assessments.

An immunization training program was developed for low-income families with children between 19 to 35 months who received services at this community health department that was commensurate to their literacy skills. The goal of this immunization training program was to improve the rate of immunization of these children by increasing parental knowledge of the risks and the seriousness of contracting VPDs, the vaccines that are intended to prevent diseases, and to provide an ongoing immunization clinic for these low-income families. The immunization training session delivered precise, inclusive, and current evidence to parents in reference to immunization and the prevention of childhood illness related to the lack of immunizations. The intervention involved the evaluation of vaccine compliance, and evaluation of the educational necessities of the parents regarding childhood immunizations through pre and post-questionnaires. In addition, the intervention involved parents' opinions and attitudes in relation to immunizations.

As required by federal law, parents are given a vaccine information statement (VIS) at each immunization visit. A VIS is a vaccine-detailed, 2-page Centers for Disease Control and Prevention (CDC) information document that educates parents about the benefits and risks of the 4:3:1:3:3:1:3 vaccination series (American Academy of Pediatrics, 2011). This VIS is given to the parent during a prior visit and is made available to be read before the next immunization visit. In order to facilitate parental understanding of this material, the VIS is written at a basic literacy level and supplemented with verbal clarification by the health department nursing staff.

The QI plan will be considered by the health department for adoption to improve the health of the community and then by the state in an effort to improve its overall immunization rate and community health. In doing so, the health department nursing staff were trained so that they would feel comfortable addressing the program and responding to parents' questions and concerns related to immunizations. The first part of the QI project consisted of three learning modules that were presented to the low income families in the community.

Module 1: Vaccine-Preventable Diseases

- Gave details related to the past impact of the most important infectious disease epidemics;
- Categorized the main vaccine-preventable diseases;
- Related how specific and public immunity vary; and
- Identified the consequences of electing not to have children vaccinated.

Module 2: Vaccine Endorsements

- Defined the growth of vaccines;
- Distinguished the categories of vaccines;
- Talked about facts on vaccines, as well as adverse effects and contraindications; and
- Chose suggested vaccinations for children according to the CDC suggested immunization timetable.

Module 3: Vaccine Fears

- Defined social factors that influence immunization;
- Deliberated the community's existing vaccine safety apprehensions;
- Clarified obstacles to immunization for the community;
- Recognized two official fears in reference to immunizations; and
- Related moral values to vaccine circumstances.

The three components of this program were presented by an instructive lecture by means of a PowerPoint slide presentation. The Centers for Disease Control and Prevention (2013) was used as an available source for adapting the educational materials. This immunization training program was designed to provide important information related to childhood immunization that parents need to know. The nursing staff were also involved in this quality improvement project designed to improve childhood immunization in low income families. Effective communication strategies with parents related to childhood immunizations were described. This program reinforced that as front line patient care providers, PHNs provide information and resources regarding childhood immunizations in an effort to support evidence-based decision-making concerning immunizations. Health care providers are responsible for providing parents with precise evidence regarding the risks and benefits of childhood immunizations (Luthy et al., 2010). It was further emphasized that healthcare providers are in an ultimate position to clearly impact compliance, and are considered to have the greatest impact on whether or not parents have their children immunized. Accurate knowledge related to childhood immunization is needed to improve parents' awareness (Bernsen et al., 2011). When information related to immunization comes from a reliable health care source, it can be of utmost significance to a parent deciding whether or not to their child immunized (Myers & Pineda, 2009).

A nurse managed and operated immunization program that was free of charge to the county residents was developed by working with the health department nursing staff. In preparation for this, the health department nursing staff received 4 hours of in-service implementation training for this program. The content of the program was described with detailed information that provided the nursing staff a baseline understanding of what was to be accomplished. All questions were encouraged and answered.

Measures

To assess the effectiveness of this immunization training program for parents on the immunization rates, interaction with parents in the low income families was essential. First of all, before the training, it was important to:

- Establish why parents may consider not to immunize their children;
- Find out what kind of attitude parents have towards the vaccines they know; and
- Establish parents' views in immunization and its effect on both the positive and negative.

After determining the main factors that may lower immunization rates, the training was offered and a comparison of the views were made. Effectiveness of the training program was ultimately measured based upon the results of the pre-and-post program implementation questionnaires administered to the parents. The immunization rates post implementation of the quality improvement plan were compared to the immunization rates one month prior to the project's implementation. Effectiveness of the program will be further evaluated on an ongoing basis to achieve the CDC and Healthy People 2020 goal of 80% for the children in this county between the ages of 19 to 35 months to determine completeness of the 4:3:1:3:3:1:3 vaccination series.

A mixed method design was used to assess the effectiveness of implementation. To assess immunization completeness rate among children 19 to 35 months old, a retrospective cohort study was used. Immunization rates for 19 to 35 month old children were evaluated by using the CDC's Comprehensive Clinic Assessment Software Application (CoCASA). The county immunization rates were compared at two time points: August 2016 (pre-intervention) and September 2016 (post-intervention). Data were initially extracted from the State Registry into CoCASA. In alignment to the CDC's recommended schedule for childhood immunization, if

the subsequent immunizations were received by 24 months of age: five oral polio vaccine (OPV), four diphtheria-tetanus-pertussis (DTP); three hepatitis B virus (HBV); and one measles-mumps-rubella (MMR), the child was considered as up to date (UTD) (Al-Iela et al., 2014, p. 2). Reliant upon the completeness of the immunizations, the immunization status of the children was categorized into two groups. If a child had been vaccinated with the entire immunization doses, the child was recognized as being complete with immunizations. On the other hand, the child was considered as partially immunized if at least one immunization dose was skipped.

A prospective cross-sectional before- and after- test design was used to assess the influence of this immunization training program among low- income parents in which data were collected through technologically advanced and authenticated discussion-directed questionnaires. This study was conducted amongst low-income parents that attended the county health department, especially those with children 19 to 35 months of age. The knowledge, attitude and practices (KAP) questionnaire on immunization was developed by Al-ela et al. (2011). The questionnaire was comprised of twenty questions: ten knowledge- based questions and ten questions relevant to attitude and practice. Evaluation of knowledge and practices (KP) consisted of the following scoring guide: 1 point for each correct answer response and 0 point for no or do not know responses. Each statement in the questionnaire was added up and calculations were performed for the knowledge and practice scores. Scores ranged from 0 to 20 for the overall knowledge and practices, with higher scores signifying a higher level of knowledge and practices related to immunization. In relation to the median split method, parents were reflected as having insufficient immunization KP with a score below 10 (median). If scores ranged from 10 to 20, parents were reflected as demonstrating sufficient knowledge and practices. This

system of scoring and classification was utilized to classify the amount of knowledge and practices among parents (Al-lela et al., 2014).

The SPSS version 20.0 software package was used to evaluate the data and the level of significance was set at less than 0.05 ($p < 0.05$). Descriptive statistics were used to calculate the percentage of each correct answer for each knowledge question on immunization. The goal of this quantitative method of collecting data was to calculate and measure a performance through the use of questionnaires and numerical processing of the data collected. The main process of collecting quantitative data is by questionnaire surveys (Al-lela et al., 2014, p. 2). The highest score conceivable was 20, if the parent selected all the right answers. In order to compare differences in knowledge before and after the immunization training program, the McNemar t-test was used for categorical information.

Analytic Strategy

This project highlighted the impact of an immunization training program for low-income parents. It was analyzed for low-income families within the community during a one-month time period. The major importance in the case of nursing knowledge is studying the impact of immunization training. Parents are the guiding force when it comes to making decisions as to whether or not their children are immunized. By educating the parents, misconceptions and myths in contradiction of immunizations can be limited, therefore, immunization rates will be increased.

The most important indicators in reviewing the influence of immunization training on the immunization rates were quantitative. This health department simply provided records of the rates of childhood immunization before and after the training program in percentages. Besides

the quantitative indicators, qualitative indicators supported the percentages accordingly. In fact, the qualitative indicators such as the attitude of the parents towards immunization was of great importance throughout the project.

Ethical Considerations

All parents who registered and attended the training program were asked to read and sign an informed consent before completing the questionnaires. Attendance was voluntary and all replies were unidentified. There were no potential author conflicts of interest in conducting this project.

Results

A total of 39 parents were registered for the program, but only 36 attended and participated. All of the parents were mothers. Knowledge and practice scores were assessed before and after the training program using the KAP immunization survey questionnaire. This questionnaire was comprised of two sections. The first ten statements were related to knowledge (1-10) and the last ten statements (11-20) were related to practice. The correct answer response rates had improved for all 20 statements after the immunization training program.

The KP scores extended from the range of zero to 20 and 10 was indicated as the median. Utilizing the arrangement of the KP scores described in the median split method, two groups of knowledge were formed: adequate and inadequate. Among the 36 participants who answered the questionnaire, it was calculated that 73.4% (n=27) of the mothers had adequate KP scores while 26.6% (n=9) were found to have inadequate KP scores at the end of the training program. A before-and-after approach was used to measure the outcome of this QI program. The immunization rate percentages for the 4:3:1:3:3:1:3 vaccination series for 19 to 35 month old

children remained the same following one month after the training program. Future studies using a longer period of time to observe the changes in parental behavior and rates of completed immunization series are recommended in order to evaluate the definite efficiency of improving parental knowledge related to childhood immunization and to improve childhood immunization rates.

Discussion

This study demonstrates that providing immunization information to parents is an authentic and practical method to expand parental knowledge and increase childhood immunization rates in low-income communities. Evaluation of the parents' knowledge in the study revealed differences in responses to questions intended to evaluate their knowledge on childhood immunization. All of the mothers had the knowledge that vaccines prevent disease as shown in question 1 and 2 when 100% of mothers gave the correct answer before as well as after the training. All of the mothers were in favor of vaccination and understood that children were protected from some serious infectious diseases and their complications with routine immunizations. Questions 3, 4, and 5 are associated to the types of vaccines. Less than half of the mothers (28%) did not know that there are two different types of vaccines. Only 67% of mothers knew what active vaccines were made of and 81% of mothers knew what the definition of passive immunization is. Vaccine contraindications were presented in question 6 in which 72% of mothers believed that fever was the most important reason why a vaccine should not be given. The lowest responses (11% and 8%) respectively, before the training were apparent in questions 7 and 8 related to the storage and handling of vaccines. It is possible that these low percentage levels might be due to the mother's level of education. Approximately 81% of mothers were able to answer question 9 that related to vaccination schedules and understood that

children were protected from some serious infectious diseases and their complications with routine immunizations. In question 10, (97%) of mothers answered correctly that vaccination can be harmful. This indicated that the majority of the mothers were aware of the potential harmful side effects of vaccines.

In question 11 and 12, all of the mothers (100%) were in favor of vaccination for their children and 100% of mothers would recommend immunization to other mothers. Additionally, in question 13, (58%) of mothers responded correctly to the initiation of vaccination during the first week of age. The strengths of this study included the use of a step-by-step plan which made sure the study and the evaluation phase remained on course and on schedule. Questionnaire surveys that could be returned anonymously were another strength of this study.

Interpretation

The results of this study were comparable to other findings. For example, in a study conducted by Al-lela et al. (2014), the utilization of educational programs improved childhood immunization rates and parental knowledge and practice. This study is also supported by the findings of a study conducted by Owais, Hanif, Siddiqui, Agha, and Zaidi (2011) that indicated an evidence-based approach to quality improvement improved parental knowledge regarding childhood immunization. The conclusion of these studies indicated that future efforts are necessary to increase parental knowledge and practice supporting childhood immunization practice. The studies also concluded that the periodic evaluation of immunization rates and the utilization of training programs for parents were found to increase parental, knowledge and immunization practices.

Limitations

Limitations were present in the study. One of the limitations present was the fact that the study was conducted only with low income parents residing in one county. This county has a relatively small sampled population in comparison to the state. A second limitation was the outcomes may not be generalized to all income families in the county or to all of the counties in this southwestern state. The outcomes also may not reflect the knowledge and practice of all low-income parents; relatively, they reflect only the knowledge and practices of those who in fact attended and took part in the program. Selection bias due to the study setting including only mothers and this health department setting was another limitation. In addition, the time frame was only one month in length. Nevertheless, the study created information about low-income parents' knowledge of childhood immunization which provided the baseline information order to increase the present immunization rates.

Conclusion

The outcomes of this study show that an immunization training program designed for parents within low- income had a positive influence on their immunization knowledge and practice. There is a necessity to improve parental alertness and knowledge concerning the benefits and significance of immunization, along with the damaging magnitudes of incomplete or not-up-to- date immunizations. A strategic educational program is necessary and parental educational levels must be considered with the planning of the program. Low-income parents need immunization-training programs, especially those with a lower educational level.

Funding

This project did not obtain any funding from any funding organizations in the community, profitable, or charitable sectors.

References

- Alberta Immunization Strategy. (2007-2017). Retrieved from
www.health.albertadocuments/Immunization-Strategy-07.pdf
- Agency for Healthcare Research and Quality. (2013). Plain talk about childhood immunizations. Retrieved from <http://origin.www.ahrq.gov>
- Agency for Healthcare Research-and Quality. (n.d). Plan-Do-Study-Act (PDSA). Retrieved from
<http://innovations.ahrq.gov/qualitytools/plan-do-study-act-pdsa-cycle>
- Al-lela, O. Q. B., Bahari, M. B., Al-abbassi, M.G., & Basher, A.Y. (2011). Development of a questionnaire on knowledge, attitude and practice about immunization among Iraqi parents. *Journal of Public Health*, doi: 10.1007/s10389-011-0411-9
- Al-lela, O.Q.B., Bahari, M. B., Al-Qazaz, H.K., Salih, M.R., Jamshed, S.Q., & Elkalimi, R.M. (2014). Are parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance? A mixed method study. *BMC Pediatrics*, 14(20), 254-260. doi: 10.1186/1471-2431-14-20
- American Academy of Pediatrics. (2011). Policy Statement---Prevention of varicella: Update of recommendations for use of quadrivalent and monovalent vaccines in children. Retrieved from <http://pediatrics.aappublications.org/content/128/3/630>

- Awadh, A. I., Hassali, M.A., Al-lela, O.Q., Bux, S.H., Elkalimi, R.M., & Hadi, H. (2014). Does an educational intervention increase parents' knowledge about immunization? Experience from Malaysia. *BMC Pediatrics*, 14, 254. doi: 10.1186/1471-2431-14-254
- Bernsen, R.M., Al-Zahmi, I.R., Al-Ali, N.A., Hamoudi, R.O., Ali, N.A., Schneider, J....
Grivna, M. (2011). Knowledge, attitude and practice towards immunization among mothers in a traditional city in the United Arab Emirates. *Journal of Medical Science*, 4(3), 114-121. doi: 10.2174/1996327001104030114
- Brown, C.G. (2014). The Iowa Model of evidence-based practice to promote quality care: An illustrated example in oncology nursing. *Clinical Journal of Oncology Nursing*, 18(2), 157-159. doi: 10.1188/14.CJON.157-159
- Centers for Disease Control and Prevention. (2013). Achievement in public health: Impact of vaccines universally recommended for children---United States, 2012. August 18, *MMWR Morbidity Mortality Weekly Report*, 46(25), 243-248.
- Centers for Disease Control and Prevention. (2015). National, state, and local area vaccination Coverage among children 19-35 months—United States, 2010. September 13, *MMWR Morbidity Mortality Weekly Report*, 59(36), 1171-1177.
- Georgia Department of Public Health. (n.d.). Georgia Immunization Registry (GRITS). Retrieved from georgia.gov/.../georgia-department

Luthy, K.E., Beckstrand, R.L., & Callister, L.C. (2010). Parental hesitation in immunizing children in Utah. *Public Health Nursing*, 27(1), 25-31. doi:

10.1111/j.1525.1446.2009.00823

Mereena, M. & Sujatha, R. (2014). A study on knowledge and attitude regarding vaccines among mothers of under five children attending pediatric OPD in a selected hospital in Mangalore. *Journal of Nursing and Health Science*, 3(5), 39-46.

Myers, M., & Pineda, D. (2009). Misinformation about vaccines. In A. Barret & L. Stanberry (Eds.), *Vaccines for biodefense and emerging and neglected diseases* (pp. 255-268).

London: Academic Press, Elsevier.

National Center for Education Statistics. (n.d.). National Assessment of Adult Literacy: State and County Estimates of Low Literacy.

Retrieved from <http://nces.ed.gov/naal/estimates/overview.aspx>

Owais, A., Hanif, B., Siddiqui, A.R., Agha, A., & Zaidi, A.K. (2011). Does improving maternal knowledge of vaccines impacts infant immunization rates? A community-based randomized-controlled trail in Karachi, Pakistan. *BMC Public Health*, 11(1), 239.

doi: 10.1186/1471.2458-11-239

Saeterdal, I., Lewin, S., Austvoll-Dahlgren, A. Glenton, C., & Munabi-Babikumira, S. (2014).

Interventions aimed at communities to inform and/or educate about early childhood vaccination. *Cochran Database System Review*, 19(11). doi: 10.1002/14651858

Task Force on Community Prevention Services. (2012). Vaccinations for preventable diseases:

universally recommended vaccines. *The Community Guide 2012*. Retrieved from

<http://www.thecommunityguide.org/vaccines/iniversally/index.html>

Titler, M.G., Kleiber, C., Steelmaqn, V.J., Rakel, B., Budreau, G., Buckwalter, K.C....

Goode, C.J. (2001). The Iowa model of evidence-based practice to promote quality care.

Critical Care Nursing Clinics of North America, 13(4), 497-509.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy ([3.01.01](#)) and Research Misconduct Policy ([3.03.06](#)), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the APA *Publication Manual*.

	Amanda W. Cooper RN, MSN	
Learner name	<i>Amanda W. Cooper RN, MSN</i>	October 24, 2016
and date	<hr/>	
	JoAnn Runewicz RN, MSN, EdD	
Mentor name	<i>JoAnn Runewicz RN, MSN, EdD</i>	Capella University
and school	<hr/>	