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IMPLEMENTATION AND EVALUATION OF CULTURALLY SENSITIVE AUTISM EDUCATION
IN THE SOMALI AMERICAN POPULATION: INFLUENCE ON KNOWLEDGE AND ATTITUDES
ABOUT MMR VACCINE

DNP Project
Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

St. Catherine University
St. Paul, Minnesota

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ST. PAUL, MINNESOTA

This is to certify that I have examined this
Doctor of Nursing Practice DNP project manuscript
written by

Jessica Hanson Determan

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by
the final examining committee have been made.

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Date

DEPARTMENT OF NURSING

Abstract

Immunization data from an urban clinic showed that the rates of children receiving the measles, mumps, rubella (MMR) vaccine following the Centers for Disease Control and Prevention (CDC) recommended time frame was lower than other childhood immunizations (HealthPartners, 2018). Furthermore, the rates for timely MMR vaccination were lowest in the Somali-American population (HealthPartners, 2018). The Minnesota Department of Health (MDH) reports that approximately half of Somali-American children living in Minnesota receive the MMR vaccine as scheduled (MDH, 2019). Comparatively, this is far less than the 92.58% of children in Minnesota who are fully vaccinated with two MMR vaccines (MDH, 2019).

There are many reasons for vaccine hesitancy including fear of autism, side effects, objections to large number of immunizations, religious grounds, lack of access, cost and lack of knowledge (Ventola, 2016). This project aims to address the concern related to fear of autism. Fear of autism has been reported as a concern for vaccine hesitancy among Somali-American parents (Holton, 2012 & MDH, 2019). In Minnesota, 1 in 26 Somali-American children has been given an autism diagnosis, therefore education surrounding MMR vaccination and the development of autism is needed (Holton, 2012 & MDH, 2019). Education should be provided by individuals with culturally sensitive training as it helps improve cross cultural communications and promotes stronger relationships built on trust (Hill & Cox, 2013).

The purpose of this project is to implement and evaluate a culturally sensitive patient teaching approach to incorporate autism education during telehealth visits. The project will answer the following question: What is the effect of a culturally sensitive autism education intervention during telehealth visits on Somali-American parents' knowledge and attitudes about measles, mumps and rubella (MMR) vaccine compared to standard care? The vision for this DNP quality improvement project is to empower families to make decisions rooted in evidence-

based information regarding MMR vaccination and the development of autism while respecting cultural beliefs.

Participants for this project consisted of Somali-American parents at least 18 years of age or older. A pre-survey-post-survey design was used with (10) questions and corresponding responses, rated on a Likert scale. Parents completed the pre-survey related to their knowledge of MMR vaccine and autism. The pediatric primary care provider performed the education intervention after reviewing the parents' pre-survey responses. Parents were also mailed an educational brochure. A pediatric registered nurse (RN) performed the post-survey with the parent one week later. A Somali interpreter was utilized for non-English speaking parents.

Twenty-nine parents completed the pre- and post- survey. Data analysis using both a paired *t*-test and the Wilcoxon Signed Rank test was used to interpret data results for each question. All 29 parents' responses to the pre- and post-survey were compared. Analysis of the results showed overall there was a significant statistical change. Data for both the paired *t*-test and the Wilcoxon Signed rank test showed a p-value of less than 0.05 for each question result, therefore indicating rejection of the null hypothesis.

Just as science and theory tend to lead nursing practice, this project is rooted in evidence-based research to ensure a significant contribution to nursing practice (Moran, Burson & Conrad, 2017). Doctor of Nursing Practice leaders influence systems change to promote patient and family centered care. This project enhances nursing practice by supporting educational development of patients and health systems and promoting evidence-based change.

Background

Immunizations are given per the Centers for Disease Control and Prevention (CDC) recommended immunization schedule at a pediatric and family urban clinic (CDC, 2019). The process for routine vaccination administration began with the well child visit where vaccine recommendations are discussed with the parent or guardian. Vaccine recommendations include benefits, risks, and potential side effects and parents were given a vaccination information statement (VIS) with information pertinent for each immunization anticipated. Parent questions and concerns were answered and parents either gave consent for their child to receive the recommended immunizations or decline one or all immunizations. Many barriers to vaccination adherence had been identified in this clinic including fear of autism, side effects, objections to large number of immunizations, religious beliefs, lack of access, cost, and lack of knowledge. This project aims to address the concern related to fear of autism because the current standard of care does not routinely include this discussion (Ventola, 2016).

To determine the impact of culturally sensitive autism information on MMR immunization rates of Somali-American children enrolled in an urban primary care clinic, current immunization rates were analyzed. Measles, mumps, rubella immunization data at the urban clinic showed that the rates of children receiving the MMR vaccine at their scheduled time was lower than other childhood recommended immunizations (HP, 2018). Furthermore, the data showed that the MMR rates were lowest in the Somali-American population. The Minnesota Department of Health reported about half of Somali-American children living in Minnesota receive the MMR vaccine as scheduled (MDH, 2019). Lower MMR vaccine rates led to measles outbreaks across the nation and in 2017 there was a measles outbreak in Minnesota involving 75 cases occurring in the Somali-American community that was traced to poor vaccination rates

(CDC, 2019). In 2018, there were 17 measles outbreaks reported across the United States affecting 372 individuals (CDC, 2019). In 2019, there were 127 cases of measles reported across ten states from January 1, 2019 to February 2, 2019 (CDC, 2019). Complications from measles can lead to brain damage and death (CDC, 2019). In addition to measles, there were 72 cases of mumps reported in 2017 in Minnesota which is one of the three conditions that the MMR vaccine is designed to prevent (MDH, 2019). In the urban clinic identified for this project, the immunization rates for other childhood vaccines tended to be high in the Somali-American population (HP, 2018). Decreased MMR vaccination rates are attributed to a reported fear of association between receiving the MMR vaccine and the development of autism (Vaccine Rash Confounds Investigation, 2017).

Fear of autism is highly correlated with decreased MMR rates in the Somali-American population (Uchiyama, 2007; Sathyanarayana Rao, 2011; Godlee, 2011; Holton, 2012). Telehealth communications with Somali families conducted for this project supported the evidence that fear of autism is the single most influential cause for low MMR vaccination rates. Somali-American children are at greater risk of developing serious diseases including measles, mumps, and rubella and experience poorer outcomes of illness if they continue to have lower MMR vaccination rates (Bauer, 2003). Autism is not routinely discussed during well child or telehealth visits for children who have no signs or symptoms and when parents have no concerns of the condition. Accurate, evidence-based information about autism must be presented to parents or fear of vaccinating children will continue, placing children at risk for developing serious illness.

Recognition of the fear associated with receiving the MMR vaccine and autism development, must include examination of the health care delivery system's messaging

surrounding MMR vaccination. Health care providers should assess parents' fears and provide evidence-based information regarding vaccine adverse events and address parents' concerns regarding any link to autism during well child visits (AHC, 2018, ANA, 2015). Primary care vaccine education practices that include evidence-based autism education are vital to patient adherence to recommended vaccine schedules (Asch-Goodkin, 2002; Burns, 2003; Chang, 2018). Establishing a process that will allow all team members to receive the support and training needed to provide autism education, and the allotment of appropriate time for education during the well child visit, is important to promoting vaccination compliance (Mayer, 2012).

Purpose Statement

The purpose of this DNP project was to implement and evaluate a culturally sensitive patient teaching approach to autism education during telehealth visits. This teaching approach aimed to educate Somali-American families about autism and vaccination by providing accurate, culturally sensitive, evidence-based information. The question driving the inquiry for this project was: What is the effect of a culturally sensitive autism education intervention during telehealth visits on Somali parents' knowledge and attitudes about MMR vaccine compared to standard care?

This DNP project took place within an urban clinic that is part of a large accountable care organization. The project team consisted of the project director, pediatric provider, interpreter, and the pediatric RN. The focus population was Somali-American parents. The project implementation used a telehealth platform due to the COVID-19 pandemic. Telehealth was defined as communication that occurred either by video or voice only using telephone.

The first goal was to provide culturally sensitive education related to autism and MMR vaccine to pediatric providers and support staff at the urban clinic. This was a one-time education

session. The goal was to have at least three of the four pediatric providers or 75% of providers participate in the education program by June 2020.

The second goal was to assess parent knowledge related to autism and MMR vaccine via survey given prior to any education provided by the pediatric provider. Parents were to complete a questionnaire related to autism and MMR vaccine to assess presence or absence of common misconceptions about vaccination. This was a one-time pre-survey, completed at the video or phone visit with the pediatric provider. Achievement of this goal was determined to be successful with 80% of Somali-American parents/guardians completing the questionnaire during all initial telehealth visits between June and August 2020.

The final goal of this project was to implement autism education during the video or telephone visit after reviewing the pre-visit survey results. The provider devoted a portion of time during the visit to explain and discuss autism and provide evidenced-based information. Parent knowledge was assessed during a telehealth visit one week after the provider visit. The pediatric RN surveyed the parents from June to August 2020 using the post-education questionnaire. This goal was achieved when at least 50% of participating Somali-American parents demonstrated increased knowledge. Increased knowledge was determined by utilizing a paired *t*-test and the Wilcoxon Signed Rank test as the measure of success. Institutional review board (IRB) approval for this quality improvement project was obtained by St. Catherine University and the participating urban clinic organization.

Theoretical Framework

Madeline Leininger's Transcultural Nursing Theory or Culture Care Theory was the basis for the theoretical framework of this project. Leininger's theory focuses on providing effective and meaningful care to patients of different cultures by understanding and knowing them in

relation to nursing and health care practices, beliefs, and values (Leininger, 2004). Cultural care accommodation or negotiation is a way in which to foster optimal health outcomes and shared goals for patients of particular cultures by promoting creative nursing actions that encourage adaptation and negotiations within health care communities (Leininger, 2004). Leininger's framework suggests that nurses who practice cultural humility are better able to help patients modify behaviors while respecting cultural values to promote positive outcomes (Leininger, 2004). This theory supports the DNP project by understanding Somali-American cultural beliefs and values while incorporating evidence-based autism education.

Literature Review

The literature selected for this DNP project supported the need for autism education related to MMR vaccines to demonstrate a need for the proposed intervention. Criteria for selecting appropriate evidence includes ensuring strength, quality, reliability and validity of the evidence and appraisal process (Moyers & Finch-Guthrie, 2016). Research must be met with critical appraisal to ensure evidence-based practice improvement or change in order to influence healthcare decision (Mazurek-Melnik & Fineout-Overholt, 2019). Furthermore, the implementation of evidence helps produce sustainability (Mazurek-Melnik & Fineout-Overholt, 2019).

Databases used during the literature search for this project included The Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, Turning Research into Practice (TRIP), and Cochrane Library. While performing the search, Boolean operators including AND, OR were used. These Boolean operators helped connect phrases including autism education, MMR vaccine, Somali parents, decision-making, misinformation, misperceptions, parents, and influencing factors. The initial search of the databases resulted in

approximately 2,000 articles. After narrowing the search by including specific phrases related to the PICO question including autism education, MMR vaccine, and decision-making influences, 56 articles were found. The articles were further selected to twelve that answered the PICO question, supported the proposed intervention and were found to be most appropriate per the Johns Hopkins Nursing Evidence-Based Practice: Models & Guidelines 2017 and were all published within the past twenty years.

Appraisal and Synthesis

The Johns Hopkins appraisal tool assisted in the literature review and synthesis process (Johns Hopkins, 2017). Articles were systematically reviewed in attempts to understand their value to the identified PICO question. Articles were given a level and quality of evidence based on the Johns Hopkins appraisal tool (Johns Hopkins, 2017). The research and non-research articles reviewed support the need for providing evidence-based autism education when discussing the MMR vaccination.

The appraisal of the research supports the DNP project intervention that by implementing autism education during the telehealth visit, parental concerns related to the MMR vaccination and the development of autism can be addressed (World Health Organization, 2018; Brown et al., 2012). Providing an educational brochure via mail with information about autism and MMR prior to MMR vaccine administration may allow parents adequate time to review and assess the information. Ample time should be given to introduce the information and assist with parental decision making. Ideally, the project team felt education via provider-parent discussion and brochure material should begin at two months of age via telehealth visit, and all well child visits thereafter. If parents decide to immunize at the 12- month visit (first MMR), education may

cease. If parents are undecided or postpone the MMR vaccine, education should continue at subsequent well visits.

Twelve research and non-research articles supported the need for providing evidence-based autism education when discussing the MMR vaccination. The articles consisted of one systematic review, nine non-experimental and qualitative, and two non-research and quality improvement. Of the twelve articles analyzed, three were level II, seven were level III, and two were level V. Additionally, two articles were quality A and ten were quality B. Utilizing the Johns Hopkins Resource Toolkit, the evidence was found to be good, consistent, and supportive of the recommended intervention (Dearholt & Dang, 2012). Themes of the articles evaluated are presented below.

In a qualitative study by Evans et al. (2002), parents reported difficulty in obtaining objective, current information related to autism and the MMR vaccine, and cited media as being a strong influence in their decision making. The same study noted parents felt their healthcare professional was a trusted ally but felt their concerns were not adequately addressed with the provider (Evans et al., 2002). Wolff & Madlon-Kay (2014) found Somali parents reported being more likely to refuse the MMR due to adverse effects including autism and the same parents reported obtaining autism information from friends, family and the media. A similar study by Pareek & Pattison (2000) also found nearly 30% of Somali parents surveyed reported autism as the most common side effect preventing them from vaccinating their children with MMR and felt they received autism education via family and the media. The parents in the Pareek & Pattison (2000) study also reported their health care professional as being the most knowledgeable and trusted source of health information but had not discussed autism with their health care provider (Pareek & Pattison, 2000).

Another study by Jama et al. (2018) reported Somali mothers' fear of autism as an associated concern related to the MMR vaccine but data showed the positive attitude and education of nurses related to the vaccine helped relieve anxiety and compelled mothers to vaccinate their children. In a study by McMurray et al. (2004), parents reported health providers were the most trusted individual with MMR vaccine related information but parents were reluctant to bring up concerns as they felt the provider was in a rush. Parents in the same study cited influencing factors related to their vaccine decision making included providers answering parental concerns and the need for written vaccine information prior to the scheduled appointment (McMurray, et al., 2004). Hill & Cox (2013) found advanced practice nurses to be the most influential in terms of MMR decision making for parents and were among the largest number of providers promoting the uptake of the MMR vaccine. Parents who consulted with advanced practice nurses during office visits reported being well informed and trusted the information provided by the practice nurse (Hill & Cox, 2013). A study by Shelby & Ernst (2013) found providers who shared personal stories, including their decision to vaccinate their own children, helped promote positive beliefs and knowledge about the MMR vaccine further supporting autism education at the time of the visit. In a study by Nyhan (2014), *autism correction* education was implemented with parents and was effective in reducing agreement with MMR vaccination and development of autism; strong agreement of an MMR vaccination and autism association declined from 8.9% to 5.1%.

A systematic review by Jack (2004) included twelve studies that were cohort, case, cross-sectional, and time series studies. After Jack's review of the literature, it was determined there was not a higher incidence of autism in children who received the MMR vaccine, rates of autism have not increased in regards to increased MMR vaccination administration, and the time of

development of autism is not related to the MMR vaccine (Jack, 2004). The health care provider must provide evidence-based information with a culturally sensitive and competent approach, keeping in mind the traditions of the culture which affect perceptions of autism (Miller-Gairy & Mofya, 2017). The evidence presented supported the need to implement a culturally sensitive autism education intervention, specifically within the identified population. There is a lack of evidence regarding the effectiveness of a culturally sensitive educational intervention on rates of MMR vaccination. Although effectiveness of the intervention has not been well established, it is believed that beginning with culturally sensitive education begins the process of improving MMR vaccination rates in the selected population. No harm was identified for implementing a culturally sensitive autism education program with the selected population.

Project Implementation

The design was driven by the aim of the project and incorporates the data collection and analysis plan (Moran et al., 2017). A quasi-experimental design was the most appropriate for the project. The purpose of the project was to implement and evaluate a culturally sensitive patient teaching approach to incorporate autism education at telehealth visits. By educating parents they are empowered to better make decisions based on the evidence. This project design utilized an evidence-based practice model for the education program for providers. The design involved educating team members about autism and about the MMR vaccine, while incorporating information about the Somali culture. Team members were encouraged to participate in role playing conversations to evaluate their knowledge and practice responses to questions from patients and families.

Pre-visit-surveys were provided to parents via telehealth by either telephone call or through the site selected telehealth platform, Google Duo. The surveys consisted of ten questions

and used a 5-point Likert scale for responses. The surveys were used to assess knowledge and beliefs regarding autism and the MMR vaccine before education took place with the pediatric primary care provider (Appendix A). All telehealth communication took place during the weekday between 9 AM and 5 PM, with careful consideration of avoiding prayer times. Participants received education related to their survey responses and were encouraged to ask questions and voice concerns related to autism and the MMR vaccine during the telehealth communication with the pediatric primary care provider. Participants were also mailed an educational brochure with information regarding autism and MMR vaccine (Appendix B). Parents were again surveyed via telehealth, one week after the initial telehealth communication with the pediatric primary care provider to assess any changes in knowledge or beliefs. The post survey was conducted by the pediatric RN. All telehealth communications with non-English speaking parents were conducted with the Somali interpreter assigned to the project team. Data collection took place over six weeks. The estimated time commitment for the parents, pediatric provider, pediatric RN, and interpreter involved two telehealth sessions each lasting approximately five to ten minutes in length. The project team spent approximately thirty additional minutes during the education and training process. Materials costs included paper for surveys and brochures, use of printers and copier machine, envelopes and postage for mailing brochures. Cost was feasible for this project and was within the clinic organization's budget.

All participants were parents of Somali-American children, 18 years of age and older and pediatric primary care providers in the urban clinic. Somali-American families who had children within the selected age group were identified via the electronic health record. No direct physical, economic, or social risks were associated with this project. Potential psychological risks included parent concern about whether or not a child had autistic tendencies and whether or not

parenting skills were of concern. Risks were mitigated by the education provided to the families during the telehealth visit. There was minimal risk of social and/or legal implications via a breach of confidentiality regarding survey data results. The information obtained via survey was stored electronically within the clinic organization secured network as was required by the organization administration. Access to data collected for this project was limited to the project director.

Benefits of the project included an increase in knowledge regarding the lack of connection between MMR vaccine and autism diagnoses, a potential increase in MMR vaccine completion rates, and a benefit of increased knowledge from the practice of nursing. The goal of the project was to implement and evaluate a culturally sensitive patient teaching approach to incorporate autism education during telehealth visits. When empowerment through knowledge is achieved by one parent or family in the community, the knowledge is often shared with other members of the community (Wolff & Madlon-Kay, 2014). The project sought to incorporate a clinical intervention aimed at improving the care given to patients and their families during telehealth visits. Analysis of change was evaluated using a paired *t* test of statistical measures as well as the Wilcoxon Signed Rank test and further described below.

Evaluation

Twenty-nine parents completed the pre- and post-survey questionnaire. Data analysis using both a paired *t*-test and the Wilcoxon Signed Rank test was used to interpret data results for each question. There is literature to support both data analysis methods as being appropriate for analyzing data collected via Likert style pre- and post-surveys and research continues to examine both methods (Kim, 2014). Using both data analysis methods results in a cross validation of the results. All 29 parents' responses to the pre- and post-survey were compared.

The paired t -test and a Wilcoxon Signed Rank test was used to analyze parents' responses to each question comparing their pre and post responses. Analysis of the results showed there was a statistically significant change overall. Data for both the paired t -test and the Wilcoxon Signed rank test showed a p-value of less than 0.05 for each question result, therefore indicating rejection of the null hypothesis. See the chart below.

Question	Paired t -test p-value	Wilcoxon Signed Rank test p-value
1	0.000032828	0.00064
2	0.031251864	0.02642
3	0.00000029	0.00008
4	0.000754666	0.00222
5	0.005374233	0.01278
6	0.002263461	0.02665
7	0.001099313	0.00714
8	0.0000521	0.00148
9	0.0000521	0.00148
10	0.000125944	0.00222

Data averages were also examined for each question. Question one had an average pre-survey score of 3.52 and post-survey score of 4.14, indicating a 0.62 increase. Question two had an average pre-survey score of 3.28 and post-survey score of 3.66, indicating a 0.38 increase. Question three had an average pre-survey score of 3.21 and post-survey score of 4.07. This question had the overall highest increase of all survey questions with a total increase of 0.86. Question four had a pre-survey score of 3.72 and post-survey score of 4.21, indicating an increase of 0.48. Question five had a pre-survey score of 4.10 and post-survey score of 4.48, indicating an increase of 0.38.

Question six had a score of 3.97 on the pre-survey and post-survey results were 4.31 indicating an increased score of 0.34. This question had the lowest overall increased score of all

ten questions. Question seven had the overall lowest pre-survey score of 2.66 and the post-survey score was 3.03, indicating an increased score of 0.38. Question eight had a pre-survey score of 3.34 and a post-survey score of 3.79 indicating an increased score of 0.45. Question nine had a pre-survey score of 4.07 and a post-survey score of 4.52, indicating an increased score of 0.45. Question ten had a pre-survey score of 4.10 and a post-survey score of 4.52, indicating an overall increased score of 0.41. The table in Appendix C represents a visual representation of question analysis.

Four participants who responded that they plan to immunize their child with the MMR vaccine commented that they would wait until their child was four to five years of age, in order to make sure they did not have autism before administering the MMR vaccine. Additionally, five participants stated they had not had discussions with their primary care providers about immunizations at wellness exams. Five participants verbalized frustration surrounding the topic of immunizations and one participant stated the primary care provider informs the family the nurse who will be administering the immunizations will discuss them with the family but often there is no discussion regarding the immunizations. Two participants reported their primary care provider seems rushed at visits and they do not discuss the immunizations to be given. All 29 participants in the pre- and post-survey responded agree or strongly agree that they would like more information regarding MMR vaccine and autism. The average post survey score of 3.03 on question seven correlates with a neutral response indicating a need for further education and discussion.

Discussion

There were a few limitations to this project. A delay in approval from the clinic site was caused by a collective bargaining dispute and re-allocation of personnel within the accountable

care organization. The delay pushed the start date to the beginning of the COVID-19 pandemic which had the most significant impact and limitation on the project. Initially, the project was to be completed in the urban primary care clinic by capturing patients and families as they were scheduled for well child examination visits. The urban primary care clinic where the project was approved to take place, underwent drastic changes to its clinic functioning and moved from a fully functioning primary care site to a respiratory illness only site during the COVID-19 pandemic, cancelling all well child exams. This change provided an opportunity to move the project to a telehealth platform. The telehealth limitation ended up allowing for a more innovative approach to the project. As the project commenced, there were many lay-offs and furloughs of staff and providers, thereby decreasing the workforce and leaving only one pediatric provider at the clinic. The lack of available support staff and significantly lower pool from which to obtain participants had a significant impact on the sample size. In addition, the Somali outreach coordinator position was eliminated. The loss of the Somali outreach coordinator, who had initially agreed to participate on the project team, impacted the project by limiting a key source of communication between the health care team and the Somali-American community. The Somali outreach coordinator had built strong trusting relationships within the community and with her involvement the project may have improved the number of completed surveys and increasing the sample size. Considerations for the future would include encouraging a Somali outreach coordinator to participate as part of the project team.

The small sample size limited generalizability of the project results. A total of 29 families fully completed the pre-visit and post-visit surveys. An additional 20 pre-visit surveys were completed but the project team was unable to reach the participants to complete the post survey, despite multiple attempts. Families were notified they would be contacted one week after

completing the pre-survey, but an exact date and time was not specified. Future considerations may include scheduling a future date and time for the post-survey interview before ending the initial visit. The use of Google Duo limited the face to face contact with families as many participants did not have the application on their phones and did not want or have time to load the application on their devices. Future considerations may include assessing whether or not the family has access to Google Duo before the initial telehealth communication and if they would like additional assistance in helping them with the application. Selection of a different platform may be an option as well. Additionally, the health care organization may consider providing incentives for families to participate.

Recommendations

Discussion about immunizations is more important than ever, as the COVID-19 pandemic has caused an overall drop in well child exams and decreased immunization rates (AAP, 2020). The AAP reported that from March to April 2020, immunizations administered dropped by 2.5 million less vaccines including 250,000 fewer MMR vaccines, raising the risk of an outbreak of vaccine preventable illness (AAP, 2020). Rethinking the current standard of care to incorporate culturally sensitive autism education when speaking to families regarding the MMR vaccine will be an important part of the health care system's messaging. Health care organizations should consider employee training to promote culturally sensitive autism and MMR education for providers and team members. The DNP prepared nurse is at the forefront of leading change and facilitating education and knowledge development among health care disciplines. In the rapidly changing world of health care, meeting the needs of patients and families becomes increasingly difficult. Healthcare providers and health institutions must continually evaluate the standard of care provided, identify gaps, and change practice to meet the

needs of all patients and families through the use of culturally sensitive, evidence-based practices.

Conclusion

The overwhelming response from parents indicated families would like more information regarding MMR vaccination and the development of autism, supporting the recommendation to incorporate this education during patient-provider interactions. The evidence gathered by this quality improvement project sets the groundwork for implementing an educational plan with multiple providers in multiple clinic settings during non-pandemic times. It is the responsibility of the Doctor of Nursing Practice prepared nurse to lead and influence systems change and to continue to seek opportunity to improve patient outcomes. This quality improvement project is an example that can be used for the development of future education programs that provide culturally sensitive education to increase parent knowledge. This project showed that culturally sensitive and timely education regarding vaccination and the occurrence of autism in children may influence parent decisions regarding immunization with MMR vaccine. Improved vaccination rates decrease the likelihood of vaccine preventable illness outbreaks and improve health outcomes for children and their families (MDH, 2019).

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Background_final.pdf

Appendix A

Please read the following statements and circle the response that represents your beliefs.

1. Children with autism may have repetitive thoughts and behaviors

Strongly Agree Agree Neutral Disagree Strongly Disagree

2. Children with autism are not able to talk

Strongly Agree Agree Neutral Disagree Strongly Disagree

3. Autism is only found in the United States

Strongly Agree Agree Neutral Disagree Strongly Disagree

4. Children with autism are not able to learn

Strongly Agree Agree Neutral Disagree Strongly Disagree

5. It is important to diagnose autism early in order to get help

Strongly Agree Agree Neutral Disagree Strongly Disagree

6. The measles-mumps-rubella (MMR) vaccine protects against serious diseases

Strongly Agree Agree Neutral Disagree Strongly Disagree

7. There is a link between MMR vaccine and autism

Strongly Agree Agree Neutral Disagree Strongly Disagree

8. I plan to immunize my child with the MMR vaccine

Strongly Agree Agree Neutral Disagree Strongly Disagree

9. I would like to know more about autism

Strongly Agree Agree Neutral Disagree Strongly Disagree

10. I would like to know more about the MMR vaccine

Strongly Agree Agree Neutral Disagree Strongly Disagree

Appendix B

References

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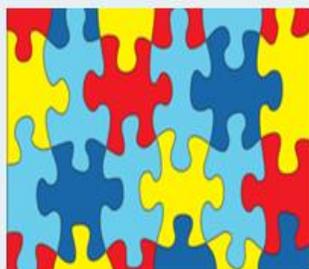
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What is Autism?

What is MMR?

Appendix B Page 2 of Education Pamphlet



Autism

Autism is a developmental disability that affects how a person communicates and relates to other people. It affects how they make sense of the world and it can affect each person differently (CDC, 2019). People with autism can have difficulty with social interactions and have restricted and repetitive behavior.

Autism occurs all around the world. Approximately 1 in 59 children have autism (CDC, 2019). Autism has been identified among all races, ethnicities and socioeconomic groups (CDC, 2019).

By diagnosing autism early, behavioral interventions and help can be provided for children to reach their full potential.

Want to Know More?

Autism Developmental Disabilities Monitoring Network

Centers for Disease Control and Prevention

Help Me Grow

Minnesota Department of Health

World Health Organization

Ask your child's health care provider questions and discuss your concerns



MMR

MMR stands for measles, mumps and rubella. The MMR vaccine is a two part series administered at 12 to 15 months and 4-6 years of age to protect children from these serious diseases.

Measles often starts with symptoms of runny nose, fever, cough, red and watery eyes followed by a rash that usually starts on the face and covers the whole body (CDC, 2019). Measles can lead to pneumonia, ear infections, diarrhea, and in rare cases brain damage and death (CDC, 2019).

Mumps can cause fever, loss of appetite, body aches, headache, fatigue, and swollen glands (CDC, 2019). Mumps can lead to deafness, swelling of the spinal cord and/or brain, pain and swelling of the testicles and ovaries and in rare cases death (CDC, 2019).

Rubella can cause fever, headache, sore throat, eye irritation and sore, swollen joints (CDC, 2019). Pregnant women who get rubella can have miscarriages and their babies can be born with birth defects (CDC, 2019).

There has been no proven link between MMR vaccine and the development of autism (CDC, 2019).

Appendix C Graphic Analysis of Pre and Post Test Items

