

MARIANNE'S ASSISTIVE CHILD-SAFE KNIFE (M.A.C.K.) FOR IMPROVING MEALTIME QUALITY FOR CHILDREN WITH AUTISM SPECTRUM DISORDER IN LITTLE ONE'S HOME THERAPY CENTER

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ABSTRACT

Mealtime Quality is a unique social event for families to allow them to come together and to share experiences and engage in meaningful conversations. Successful mealtime quality means that the family is able to exchange their thoughts, emotions and experiences on a shared table peacefully. Often times, with the current fast-paced lives families are currently living in, these experiences are overlooked and neglected thus, causing inadequate and unsustainable experiences. For a family having a child with autism spectrum disorder, it can be stressful and a more challenging experience for them due to their child's limited variations to food, challenging behaviors such as hitting, pushing and throwing away of utensils and strategies that parents used engage their child to eat and to received adequate amount of nutrients such as resorting to the use of gadgets and giving them toys throughout the time. At present, research shows limited tools for Pediatric Occupational Therapist to use and incorporate during meal preparation and mealtime and limited knowledge for parents to determine that importance of mealtime quality can gravely have an effect on to them and their children with ASD. This study aimed to determine whether the use of Marianne's Assistive Child-safe Knife (M.A.C.K.) can help improve the meal time quality for parents having a child with ASD. Specifically, this study (1) determined the problems commonly encountered by parents during mealtime, (2) determined the strategies used by parents overcome behavioral challenges during mealtime, (3) developed M.A.C.K. to help improve mealtime quality and lastly, (4) parents evaluated and provided an outstanding and relatively high impact and performance when using M.A.C.K. when using during meal preparation.

Thirty (30) parents having a child with ASD who are currently attending Occupational Therapy Services at Little One's Home Therapy Center were recruited for this descriptive-developmental study. The study involved surveys for the determined problems commonly encountered, strategies used by parents to overcome these behavioral challenges and an evaluation of the developed tool entitled Marianne's Assistive Child-safe Knife in improving mealtime quality for parents having a child with ASD. Overall, the parents with a child having ASD often ($M=2.84$) experience behavioral problems and being disruptive such as pushing/throwing away of food and utensils. To summarize, parents always ($M=3.33$) allow their child to move around and use gadgets during meals as a strategy to get them to eat. Lastly, the tool Marianne's Assistive Child-safe Knife was developed to help improved mealtime quality and parents strongly agree ($M=3.78$) that the tool can be recommended to other parents and its features can convinced you to incorporate it during meal preparation. Parents used the provided researcher made evaluation questionnaire and strongly agrees ($M=3.58$) to the overall indicators of the tool that it can be

used for a long period of time, materials are sustainable, tool is physically pleasing and can be easily recognized as a child-safe knife. The Marianne's Assistive Child-safe Knife will serve as a connection between the child and the food. It is also an alternative way for Pediatric Occupational Therapist to become innovative and accepting to use as an introductory tool to incorporate during play, meal preparation and for parents to include during mealtime to help manage children with A.S.D. at Little One's Home Therapy Center.

Keywords: Autism Spectrum Disorder, Mealtime, Quality, Meal Preparation

INTRODUCTION

Occupational therapy has historically used cooking as an intervention and assessment approach across settings. Even before occupational therapy was officially recognized as a profession in the early 20th century, one of the first professions to be employed in institutional settings was cooking. The relationship between cooking and health is highlighted by current practices in occupational therapy and the creation of the multidisciplinary field of culinary medicine (Hingst, 2023). The comprehensive approach of occupational therapy situates cooking in a broader context that can assist in identifying and removing participation barriers. Raising children with autism presents a variety of complications for many caregivers, including food issues (Hingst, 2023). It's critical to recognize that every child with autism is different and may have particular requirements and preferences when it comes to mealtimes. To assist with the routine, some people might find it helpful to use adaptable cutlery or to have a visual schedule. Others might require occupational therapy to help them improve their compliance (Do Toddlers with Autism Use Utensils, 2023) Promoting and enhancing self-care and adaptive skills is just one of the many areas that occupational therapists focus on during intervention. Mealtime success can be difficult for kids who struggle with decreased fine motor skills, poor body awareness, poor eye-hand coordination, trouble with seated posture and positioning, and decreased bimanual skills.

All things considered, learning to use utensils is a crucial ability that will foster independence and self-assurance when dining (Promoting Utensil Use through Play, 2022) To help your child eat more easily, they can also suggest adapted equipment like customized utensils. Using cutlery during meals might be difficult for kids with autism. This may be the result of behavioral problems, sensory problems, or problems with motor skills. However, many autistic children may learn how to use utensils properly with the right help and attention. (Do Toddlers with Autism Use Utensils, 2023). Overall, even though some toddlers with autism may find it difficult to use utensils, it's crucial to give them the tools and resources they need to learn how to do so. Many children with ASD could learn how to use utensils at mealtimes and have better mealtime experiences with patience and understanding. Ultimately, this study aimed to provide an improve quality to parents having a child with autism spectrum disorder during mealtimes. The results of the study would benefit the parents experiencing mealtime challenges, the occupational therapists working in the pediatric setting to be able to understand the underlying factors why this occurs and be able to provide an introductory tool to help improve mealtime quality. The children diagnosed with autism spectrum disorder would have the opportunity to help address their behavioral challenges by receiving proper interventions and techniques. This study aimed to improve mealtime quality to parents having a child diagnosed with autism spectrum disorder at Little One's Home Therapy Center. Specifically, this study (1) determined the problems

commonly encountered by parents during mealtime, (2) determined strategies used by parents to overcome behavioral challenges during mealtime and (3) presented a tool to help improve mealtime quality and its evaluated questionnaire from parents who participated in this study.

LITERATURE REVIEW

Common Problems Affecting Mealtime Quality for Children with Autism Spectrum Disorder. Food selectivity is a common problem for children with autism spectrum disorder. This word refers to a variety of conditions and actions, such as rejecting certain foods, having an aversion to specific flavors, colors, textures, or temperatures, and adhering to a diet restricted to specific food groups. Food packaging and presentation can also have an impact. Difficulty transitioning from paste to solid foods may be an early indicator of an autism trait, such as restricted and stereotyped interests, which can lead to pervasive eating disorders. Food selectivity encompasses not only food refusal and lack of diversity, but also a diet consisting of fewer than 8-20 dishes, showing a significant rigidity in food selections and a low adoption of new foods. This behavior is frequently accompanied by dysfunctional mealtime behaviors such as weeping, yelling, running away, aggressive behavior, spitting, tossing food, and chewing without swallowing. These habitual and repetitive activities help to define food selectivity (Alibrandi, 2023). Feeding issues are a major problem for autistic children, affecting both their health and family mealtimes. Mealtime is a crucial habit for families, promoting family bonding and child independence (Sylvester, 2023). Being selective with food is defined by the triad of rejection, appetite, and lack of interest in eating. The combination of these factors might lead to a restriction in the types of foods consumed and an acute aversion to trying new foods. This is related to behavioral alterations that exist in autism spectrum disorder, associated with a sensory impairment and tactile defensiveness, which can directly compromise the acceptability and textures of food and affects approximately 40% to 80% of children with this disorder (Ferreira Santos, 2023). The causes of eating problems in ASD children are thought to be multifaceted, including behavioral, cognitive, and environmental factors. Among the behavioral factors that can influence eating behaviors are symptoms of repetitiveness and rituals, such as fear of novelty, inflexibility, a craving for sameness, and hypo or hyper-reactivity to sensory stimuli. The modification in sensory processing reported in ASD patients may, in fact, make mealtime difficult for ASD individuals, given the high rate of stimulus coming from food and environment during mealtime (Margari, 2020). Autism is not caused by malnutrition or food-related issues, although for many children, there is a link between autism and food. According to research, many children with autism spectrum disorder face considerable food-related issues. This implies that if your child with ASD doesn't eat well, you are not alone. Numerous nutritional diseases resulting from inadequate food intake can create difficulties ranging from health concerns to focus and behavioral impairments (Rudy, 2022).

Strategies used by Parents to Overcome Behavioral Challenges. Many of the children with whom I have worked as a feeding therapist for the past 20 years require diversions in order to eat. In many circumstances, these children refuse to eat unless they are watching a device or playing with toys/books during feedings. These children generally require distractions because they are anxious eaters or have sensory processing difficulties, making mealtimes unpleasant and difficult. Parents frequently express shame, remorse, and concern over their child's need for distractions. Parents utilize distractions to "get the food in" because they are concerned that if

they remove the distraction, their child will not receive enough calories to grow and thrive (10 Tips: Reducing Mealtime Distractions, 2023). Feeding a child can be one of the most stressful periods of the day, or it can be a relaxing event that brings parent and child closer together while having a pleasant experience. The tips below can help your family get off to a good start when it comes to feed your child with ASD, or having a finicky eater, take steps toward pleasant feeding experiences. Creating calm mealtimes is the foundation of successful eating and feeding habits. If your youngster dreads coming to the table, he will most likely be too anxious about discovering and attempting new things. rather than centering the evening's discussion on food, you may try to alleviate the strain that frequently surrounds eating by discussing a good occasion that everyone in the family had during the day. A few of weeks of this modification may be enough to enable your youngster relax around food, paving the path for growth when trying new things. (How to Overcome Feeding Challenges, 2023) When life is hectic and we have an endless list of tasks to do, mealtimes provide an ideal moment for relatives to gather together, make meals, arrange the dinner table, sit next to one another, and discuss their days. Mealtimes are crucial not just for providing children with necessary sustenance, but also for teaching them lasting social and self-care abilities. However, when kids refuse to eat or behave well, mealtime issues can be frustrating for some parents, and it can be difficult to know what to do in these instances.

Establishing a mealtime schedule entail providing three meals per day and between two and three snacks at regular intervals throughout the day. Mealtimes should be kept to no more than 20 to 30 minutes; this should be plenty of time for your children to finish their meals. Let your kids assist in preparing meals, and when it's almost ready, let them know so they may finish what they're done (Manager, 2020). Every youngster has a unique journey when learning to eat. There is a lot to learn throughout this trip, from the basic motor skills required for swallowing and chewing to discovering new flavors and textures to making educated nutritional decisions. Eating exposes kids and teens to a constant stream of novel experiences that influence how they feel about food and mealtimes. It's normal for kids to get picky when they eat since they react differently to different foods' textures, flavors, odors, temperatures, and presentation (Help to Overcome Common Mealtime Challenges – Eastern Suburbs Mums, 2023) If we as parents believe that our kid is not receiving enough nourishment or the right kinds of meals, it worries us. Therefore, to get children to eat, we might use tactics like bribery, coercion, nagging, arguing, and the like. But we frequently overreach in doing this. As parents, we should allow our children to use their incredible, intrinsic capacity to eat in accordance with what their bodies require.

Encouraging children to eat meals or portions that they don't want to can really backfire, so try to make mealtimes as informal as possible. As parents, we should allow our children to use their incredible, intrinsic capacity to eat in accordance with what their bodies require. Encouraging children to eat meals or portions that they don't want to can really backfire, so try to make mealtimes as informal as possible (Preventing the Chicken Nugget Diet: How to Raise a Child That Will Eat Almost Anything, 2018). Getting together for meals as a family on a regular basis is one of the important family rituals that might affect a child's weight and general health. Family meals have been linked to better eating practices and attitudes about food in kids, as well as increased fruit and vegetable consumption, a lower risk of eating disorders, and enhanced psychosocial health, including lower rates of anxiety and depression. Eating together on a regular

basis helps to improve family ties, particularly between parents and children. For instance, compared to youngsters who consume with their families infrequently or never, those with regular meals with their families felt more loved and attached to their parents. These and numerous other researches demonstrate how beneficial family mealtimes are for a child's development in a variety of ways (Jones, 2023). Make eating enjoyable. Exhibit your passion for wholesome cuisine. Sharing a meal and a seat with children will make them feel more at ease. Make mealtimes casual and engage in constructive conversation for a while. Assist kids in developing self-care abilities. Toddlers can assist with setting the table, serving themselves, spreading butter or jam on bread, whisking batter, and even pouring water or milk from a tiny pitcher. Recall that dining is a social occasion. Kids should be gathered around a table to observe and converse with one another. During mealtimes, youngsters practice social skills like sharing and taking turns, as well as pick up new words. During mealtimes, child care staff ought to sit with the kids and promote conversation. Arrange enjoyable culinary activities that will motivate kids to try new cuisines. When kids are hungry, feed them the new dish as a snack after reading a book about it. Allow kids to assist with food preparation. Involving kids in food preparation might help them become more confident and might even persuade them to taste the meal they helped prepare (Childcare, 2019).

Benefits of using Knife during Meal Preparation. For friends and family from all areas of life, preparing and hosting a dinner is a unique social occasion. Some people, including those with autism, may benefit from structured procedures and visual aids when it comes to cooking and food preparation. Gaining confidence in one's ability to cook and enhance the quality of one's diet require learning to cook at a young age (LBA, 2024). When creating an educational program for students in college with ASD, several variables need to be taken into account, particularly in a course that focuses on food preparation. Understanding preferences, motor skill deficiencies, strong food preferences, rigidity, resistance to change, food neophobia (the fear of trying new meals), and the nutritional suitability of foods are some of these issues. It's critical to address these issues in order to lessen the student's severe discomfort and worry (Esposito, 2023). Use cutlery that is designed to help guide your hands into the proper position; dinnerware with a high edge should be considered; a plate guard should be used to maintain food on the plate; and stickers should be placed on the cutlery and the index fingernail to serve as visual guides. Techniques to reduce sensory sensitivity should also be taken into account. Some of these include utilizing squishy pen handles to improve the "feel" of the pen or finding other sitting to help with balance or mobility. The development of motor skills requires repetition, so in order to keep participants interested in the activity, interventions should be brief and frequent. Everybody is able to enhance their motor abilities with the correct opportunity, patience, and tactics, even though it might seem difficult at first (Laurie, 2022). Never forget to relax and enjoy yourself. Food play is a chance for your kid to engage with foods and use all of the senses in a low-pressure, play-based fashion. It is not always about eating the food. With time, eating new foods may result from your child's increased comfort level using "gaining insight about food" on their plates during mealtimes, which they will have grown accustomed to through food play. Youngsters pick up knowledge through play and by employing their senses of sight and touch. Food play can improve mealtimes, lessen fussy eating, and build a stronger bond with food (Food Play, The Fun Way to Tackle Picky Eating, 2023). A child with ASD can make mealtimes difficult. Eating habits and an openness to experimenting with novel ingredients can be influenced by food and sensory sensitivity. In contrast to 16% of kids with a history of language

difficulties, research indicates that nearly 75% of individuals with ASD exhibit abnormal eating habits. It's not impossible to engage with food and cookery, even if autistic children might be very picky about flavors, textures, and presentations of their meals. Teaching children with autism to cook has several advantages for their well-being, including improved health, increased self-assurance, and increased independence (ftadmin, 2021).Cooking as a family may be a fun activity for all kids and their parents, even those with autism spectrum disorder concerns like food opposition or sensory issues. With meticulous preparation, the process can be enjoyable while also strengthening critical abilities. Before you begin cooking, take a moment to clarifying new or unfamiliar kitchen terms, such as the supplies and appliances that you'll be utilizing. Understanding the lingo might make cooking more pleasurable for your youngster (CHOC, 2020).

METHODOLOGY

The use of quantitative research was done to help generate knowledge and create a deeper understanding on the intended study which is to help improve mealtime quality for children with autism (Fleetwood, 2023). Additionally, this study utilized a descriptive-developmental design, specifically this study would systematically and methodically describe the situation or topic of interest and would investigate patterns of growth and/or change over a period of time.

RESULTS

Table 1/Problems Encountered by Parents During Mealtime

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. My child is flexible about mealtime routines (e.g., times for meals, seating arrangements, place settings).	1.10	Seldom	9
2. My child dislikes certain foods and won't eat them.	3.61	Always	3
3. My child prefers "crunchy" foods (e.g., snacks, crackers).	3.52	Always	4
4. My child accepts or prefers a variety of foods.	1.97	Seldom	10
5. My child prefers to have food served in a particular way	3.29	Always	5.5
6. My child turns his/her face or body away from food.	3.29	Always	5.5
7. My child expels (spits out) food that he/she has eaten	3.13	Often	8

8. My child is aggressive during mealtimes (crying, screaming, hitting, kicking, scratching others).	3.19	Often	7
9. My child is disruptive during mealtime (pushing/throwing utensils, food).	2.68	Often	1
10. My child closes his/her mouth tightly when food is presented.	3.65	Always	2
Overall Weighted Mean	2.84	Often	

Table 2/Strategies Used to Overcome Behavioral Challenges During Mealtime

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Allowing my child to move around when eating	3.43	Always	1.5
2. Allowing my child to use gadgets while eating	3.43	Always	1.5
3. Letting my child pick his food	3.40	Always	3
4. Setting a timer for my child when eating.	3.07	Often	5
5. I allow my child to play with toys while eating	3.33	Always	4
Overall Weighted Mean	3.33	Always	

Table 3/Benefits of using M.A.C.K.

Problems Encountered by Parents During Mealtime	Benefits when using M.A.C.K. during Meal Preparation
My child is disruptive during mealtime (pushing/throwing utensils, food).	It helped guide your child's hands into the proper position when using utensils
My child closes his/her mouth tightly when food is presented.	It developed increased exposure to different textures
My child dislikes certain foods and won't eat them.	Using M.A.C.K. frequently but for short period of time to increase in food intake participation
Strategies Used to Overcome Behavioral Challenges During Mealtime	An increased attention span and concentration appropriate for table top activities such as sitting while eating.
Allowing my child to move around when eating	Used for pretend play and to help increased play participation.
Allowing my child to use gadgets while eating	

Table 4a/Validity

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Does the tool appear suitable for its participants?	3.70	Strongly Agree	2
2. Is the tool relevant to its function?	3.87	Strongly Agree	1
3. Is it immediately evident that the tool is measuring what is meant to measure?	3.67	Strongly Agree	3
Overall Weighted Mean	3.75	Strongly Agree	

Table 4b/Consistency

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Did the child use the tool during mealtime most of the time?	3.43	Agree	2
2. Did you see significance improvement in mealtime quality when incorporating tool most times?	3.67	Strongly Agree	1
Overall Weighted Mean	3.55	Strongly Agree	

Table 4c/Usability

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Did you feel safe when letting your child use the tool?	3.63	Strongly Agree	2
2. Did the researcher provided a clear instruction on how to use the tool?	3.80	Strongly Agree	1
3. Is there anything you want to change about the tool?	1.30	Disagree	3
Overall Weighted Mean	2.91	Agree	

Table 4d/Feasibility

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Are the resources to make the tool sustainable?	3.67	Strongly Agree	1.5
2. Did the tool help in improving mealtime quality	3.67	Strongly Agree	1.5
Overall Weighted Mean	3.67	Strongly Agree	

Table 4e/Acceptability

Indicators	Weighted Mean	Verbal Interpretation	Rank
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1. How likely are you to recommend this tool to other parents?	3.67	Strongly Agree	3
2. Did the tool's features convinced you to incorporate it during meal preparation?	3.83	Strongly Agree	1.5
Overall Weighted Mean	3.78	Strongly Agree	

Table 4f/Summary Table of the Evaluation of M.A.C.K. for Meal Preparation

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Validity	3.75	Strongly Agree	2
2. Consistency	3.55	Strongly Agree	4
3. Usability	2.91	Agree	5
4. Feasibility	3.67	Strongly Agree	3
5. Acceptability	3.78	Strongly Agree	1
Overall Weighted Mean	3.53	Strongly Agree	

DISCUSSION

1. Problems Commonly Encountered By Parents During Mealtime

As shown on Table 1, among the different problems encountered, the common problem that parents always must deal with during mealtime with their child with A.S.D. is when their child closes his/her mouth tightly when food is presented. This is ranked as the third whereas the number one common problem that often occurs is when their child is disruptive during mealtime (pushing/throwing utensils, food). It is also important to note that the problems that typically occurs are in relation to meal rigidity or how the child always sticks to food or even sticking to how food is prepared and served to them. Changes in this may cause disruptions. These are the communal challenges parents seek to be address and are often raised during therapy sessions. Overall, these experiences are inevitable to happen to parents that disrupts the mealtime quality.

2. Strategies Used to Overcome Behavioral Challenges During Mealtime

Amongst the different strategies that parents used to overcome behavioral challenges during mealtime, table 2 indicates that allowing my child to move around and allowing my child to use gadgets when eating is always done by parents to get their child to eat their food. The table also shows that parents seldom set a timer for their child when eating as to why they consume a long period of time to finish their meal. They also always let their child pick their food to eat and incorporate toys when eating as their way to approach the behavioral challenge. In general, parents tend to give in to their child's wants them to be able to feed their child when challenging behavior arises during mealtime.

3. What tool can be developed to help improve mealtime quality? Marianne's Assistive Child-safe Knife also known as *M.A.C.K.*

The Marianne's Assistive Child-safe Knife was developed to help improve mealtime quality to parents with a child having autism spectrum disorder who manifest behavioral challenges such as meal rigidity such as limiting themselves to consuming specific food texture, serving and eating food in a preferred manner of serving and disruptive behaviors such as throwing away of food, pushing away of plates and utensils and closing their mouth tightly to refrain from consuming a different variety of food that is not their preference. During the course of numerous initial evaluations and therapy sessions, an ample number of concerns were raised to the Occupational Therapists about how to help their child explore different food textures, maintain sated on their chairs when eating, being able to go eat at restaurants without having the need to use toys to get them to engage in feeding or allowing them to use their iPad/gadgets to divert their attention from their meal.

With the help of *M.A.C.K.*, parents would now could improve mealtime quality during feeding as this tool serves as a connection between the child and the food. The tool can either be used for pretend play, allowing the child to be part of the meal preparation process and allowing the Occupational Therapist to be more innovative and accepting in using an introductory tool to help manage children with A.S.D. at Little One's Home Therapy Center.

As shown in Table 3, the benefits of using *M.A.C.K* helps in simulation for using utensils during meal times as the long and wide handle of the tool can be a practice for gripping utensils and mastering eye-hand coordination, pretend play with food while using the tool can help the increase tactile exposure to different textures of food and increased awareness to play participation, an increased development for work behaviors and be able to sit on the chair for at least 5-10 minutes. Overall, *M.A.C.K.* can help addressed all factors that were mentioned in table 1 and table 2.

4. Evaluation of *M.A.C.K.* for Meal Preparation

Validity. Among the three indicators listed in terms of the tool's validity, the relevance of the tool to its function ranks number one as respondents strongly agrees the function of the tool can be perceived to what is its intended application. The second in ranking is determining if the tool is suitable to its participants and respondents gave a strongly agree score and last in ranking is to determine if the tool can immediately measure what is meant to measure, in which the researcher had to thoroughly explained to the respondents the purpose of the tool and what it intends to measure. Consistency. Amongst the two indicators listed above, the identified significance improvement in mealtime quality when incorporating tool most times is ranked number one as most respondents strongly agrees and ranking second would be if the tool was used during mealtime most of the time. Overall, the indicators above shows that tool is consistent to what it measures. Usability. Amongst the three indicators listed above, two indicators were verbally interpreted as strongly agree as respondents both felt safe in letting their child with autism spectrum disorder use the tool during meal preparations or mealtime and that the researcher was able to provide an ample amount of time to discuss the instructions on how and when to use the tool when incorporating it at home. Lastly, ranking as third in our indicator, respondents stated

that they agree to disagree in making changes in the tool provided. Overall, the indicators above imply how much the tool is functional to what is its intended to measure. Feasibility. Amongst the two indicators in measuring the feasibility of the tool, both shares the number one rank as both expresses that the material used for the tool is sustainable for the consumers to produce and tool was able to help participants have a significant improvement when it comes to their mealtime quality.

Acceptability. Between the indicators for the tool's acceptability, taking the number one rank would be the tool's features that convinced the respondents to incorporate it during meal preparation and coming in second is how they strongly agree to recommend the tool to other parents. Overall, parents with child with autism spectrum disorder both strongly agree in terms of how the tool can safely be recommended to other parents or consumers. This shows all five indicators that were considered for the evaluation. Table 4f presents the weighted means, verbal interpretation, and rank of each strategy.

Amongst the listed indicators above, four of five were noted to strongly agree in terms of the tool's validity, consistency, feasibility, and acceptability. The number one on the list that respondents strongly agree to is the acceptability of the tool to be use and incorporated during meal preparation and the likelihood to be recommended to other parents who are experiencing the same dilemma. Out of the five indicators, usability was ranked fifth this is because respondents agree to disagree to apply changes on the physical appearance of the tool. To sum it up, based on the evaluation made, respondents strongly agree to the overall indicators of the tool that it can be used for a long period of time, materials are sustainable, tool is physically pleasing and can be easily recognized as a child-safe knife.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn: (1)Parents having a child with autism spectrum disorder often always experiences behavioral challenges when it comes to the quality of mealtime due to the child's meal rigidity and disruptive behaviors, (2)Parents having a child with autism spectrum disorder always incorporates their strategies in managing meal rigidity and disruptive behaviors by giving toys, gadgets and allowing them to move around during mealtime to address common problems experienced, (3) To address poor mealtime quality, meal rigidity and disruptive behaviors, the *M.A.C.K.* tool was made to help improve mealtime quality to parents having a child with autism spectrum and (4) The *Marianne's Assistive Child-safe Knife* was rated as outstanding as parents who participated in this study.

ACKNOWLEDGEMENTS

For this, the researcher would like to thank and appreciate the following important and kindest people. Karen L.B. Tamayo, OTR, MD, EdD, our Program Director and my adviser, Antonio D. Yango, PhD, Noel R. San Antonio, DPT MSCPD, PTRP, Pedrito Jose Bermudo, PhD and Marilou C. Urbina, DBM, my research panelists, and to Susana C. Bautista, EdD, Dean of the graduate school, Research Respondents, for your time, dedication and willingness to partake in the surveys of which this study wouldn't be possible without; The researcher acknowledges her

dear family and classmates for their unwavering support and lastly, to the UPHSL – Graduate School, for your continued support since the start of my academic journey.

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