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The Application of Computer-Assisted Instruction as a Part of Treatment Plan for Patients with Various Pediatric Cases, Including Those with Autism Spectrum Disorder, in Selected Clinics and Hospitals in Metro Manila

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A DISSERTATION

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ABSTRACT

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by persistent deficits in social communication and interaction, alongside restricted, repetitive patterns of behavior, interests, or activities. The prevalence of ASD has been steadily rising globally, necessitating the development and implementation of effective interventions to support the diverse needs of individuals with this condition. Occupational therapy, with its focus on promoting participation in meaningful activities and enhancing functional independence, plays a crucial role in the holistic care of children with ASD. In recent years, Computer-Assisted Instruction (CAI) has emerged as a promising adjunct to traditional occupational therapy interventions, offering a dynamic and interactive platform for skill development and learning. However, the extent of CAI utilization and its perceived impact within the Philippine context remain underexplored.

Objectives: This research investigation aims to address this knowledge gap by conducting a comprehensive exploration of the role of CAI in occupational therapy for children with ASD in the Philippines. The study's primary objectives are as follows:

- To examine the current utilization patterns and perceived benefits of CAI among Filipino occupational therapists working with children with ASD.
- To identify potential barriers and challenges associated with the implementation of CAI in occupational therapy practice.
- To assess the impact of CAI on various patient outcomes, including social communication skills, adaptive behaviors, and cognitive development.
- To contribute to the development of evidence-based guidelines for the effective integration of CAI into standard occupational therapy practice in the Philippines.

Methodology: A descriptive, cross-sectional survey design was employed to gather data from a purposive sample of thirty (30) licensed Filipino occupational therapists actively engaged in pediatric practice. The survey instrument comprised a combination of closed-ended questions, incorporating Likert-scale items, and open-ended questions designed to elicit both quantitative and qualitative data. The closed-ended questions focused on

demographic information, CAI utilization patterns, perceived benefits and challenges, and specific patient outcomes. The open-ended questions provided participants with the opportunity to elaborate on their experiences and perspectives regarding CAI implementation.

Data analysis involved a multi-pronged approach. Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, and weighted means. Qualitative data were subjected to thematic analysis, a systematic process of coding, categorizing, and interpreting textual data to identify salient themes and patterns. This mixed-methods approach allowed for a comprehensive and nuanced understanding of the research findings.

Results: The survey results revealed a high degree of familiarity and positive regard for CAI among the participating occupational therapists. All respondents reported utilizing CAI in their practice, with a majority (83%) dedicating approximately 45 minutes per session to CAI interventions. The most frequently cited benefits of CAI included improved cognitive learning, enhanced engagement and motivation, and increased opportunities for individualized instruction. Therapists also noted the positive impact of CAI on specific patient outcomes, such as social communication skills, adaptive behaviors, and cognitive development.

However, the study also identified certain challenges associated with CAI implementation, including limited access to technology, lack of training and support, and concerns regarding the potential for social isolation. Despite these challenges, the overall sentiment towards CAI was overwhelmingly positive, with therapists expressing a strong desire for further integration of this technology into their practice.

Conclusion: The findings of this study provide compelling evidence for the efficacy and value of CAI as an adjunctive therapeutic tool within the realm of pediatric occupational therapy in the Philippines. The widespread adoption of CAI by the surveyed therapists, coupled with their positive perceptions of its impact on patient outcomes, underscores its potential to enhance therapeutic interventions and support the diverse needs of children

with ASD. The study's results advocate for the continued integration and expansion of CAI within occupational therapy practice, fostering a more innovative and evidence-based approach to care that empowers both therapists and their young clients to achieve optimal outcomes.

Furthermore, the study highlights the need for addressing the identified barriers to CAI implementation, such as improving access to technology and providing comprehensive training and support for therapists. By proactively addressing these challenges, we can ensure that all children with ASD have the opportunity to benefit from the potential advantages of CAI within the context of occupational therapy.

In conclusion, this research contributes to the growing body of evidence supporting the use of CAI in pediatric occupational therapy. The findings underscore the importance of embracing technological advancements to enhance therapeutic interventions and promote optimal outcomes for children with ASD. By fostering a culture of innovation and evidence-based practice, we can empower occupational therapists to leverage the full potential of CAI and provide the highest quality of care to their clients.

Future Directions: This study serves as a springboard for future research endeavors aimed at further exploring the role of CAI in occupational therapy for children with ASD. Future studies could investigate the long-term impact of CAI interventions on various patient outcomes, including social participation, academic performance, and overall quality of life. Additionally, research could examine the effectiveness of CAI in addressing specific skill deficits associated with ASD, such as sensory processing difficulties or motor coordination challenges.

Furthermore, future research could explore the potential of CAI to facilitate collaboration and communication between therapists, parents, and educators, fostering a more integrated and holistic approach to care. By leveraging the power of technology, we can create a more connected and supportive environment for children with ASD and their families, ultimately empowering them to achieve their fullest potential and participate meaningfully in their communities.

Table of Contents

PAGE

CHAPTER 1

Introduction

The Researcher noticed that in most parts of the world, especially in most technologically advanced countries, they had already started to adopt a new style of learning and interaction as a means of imparting knowledge. In the Philippines, few schools and hospitals had dared to explore the use of Computer Assisted Instruction as a medium of assistive learning; with the help of computers instead of the traditional method of teaching which most Occupational Therapist used to do in their treatment plan especially in connection with most Autism Patients. Nowadays, a lot of us know how to use computers. In consonance to it is the development of several interactive flat forms and multimedia programs that contribute to learning. Hence as an end result Informatics, one of the country's pioneers in Computer Assisted Learning, paved way to doing a curriculum that would help a lot of adults as well as most children to be engrossed with learning while being aided with several computer programs that are developed in order for them to learn and at the same time have fun. Such program that had been introduced by said company paved way for another approach that may help aid not just in learning but also seeing developments and advancement towards the ability of a person in acquiring knowledge.

Thus, the researcher wishes to explore on how to implement Computer Assisted Learning as part of the Treatment Plan in Occupational Therapy for Autism, which raises a great deal of challenge of all neurodevelopmental cases because there has been no known cure for it. Indeed, in a substantial minority of affected individuals, adaptive behavior can reach a considerably high level, with independent living, employment and even stable partnerships in adulthood. Hence, it is evident that most individuals with autism are not totally blank concerning interpersonal exchange, but do engage in social participation to a certain degree (Kennedy & Shukla, 1995; McGee, Feldman & Morrier, 1997).

The researcher also notices that in most part of the world especially in most technologically advanced countries, such as UK, Maryland, Seattle, and Germany they had already started to adopt a new style of learning and interaction as a means of imparting knowledge, hence these were some of the studies that was made:

(1) Computer-based intervention in Autism spectrum disorders

Author: Dr Sven Bцlte - Johann Wolfgang Goethe-University, Frankfurt am Main, Germany,

Dr. Sven Bölte's study provides promising evidence for the potential benefits of computer-based interventions in improving emotion recognition abilities in adolescents with ASD. The use of the Emotion Trainer program, which focuses on facial expressions and their connection to specific situations, showed positive outcomes on both program-specific tasks and more general measures of emotion recognition.

Two (2) randomly allocated groups of eleven (11) adolescent children with infantile autism or Asperger's syndrome recruited at special schools were examined. One group received emotion recognition training using the Emotion Trainer in ten (10) thirty (30) minutes sessions over two (2) to three (3) weeks, while the other group did not get any computer training. The program consists of four (4) modules showing facial expressions in a number of situations, which are connected to specific tasks, e.g. decide whether a situation would make a person angry, happy, sad or afraid. Group comparisons showed a substantial reduction in errors made in the emotion tasks of the computer program during the training phase. In addition, the trained probands were assessed pre- and post-intervention using three (3) independent outcome measures - namely judging facial expression photographs, cartoons depicting emotion-laden situations and non-literal stories - and they improved on all three criteria, compared to the control group.

Key Points and Implications

- Targeted Skill Development: The study highlights the effectiveness of computer-based training in addressing specific skill deficits associated with ASD, particularly in the area of emotion recognition. This suggests that such interventions can be valuable tools for enhancing social-emotional skills in this population.
- Generalization of Skills: The improvement observed in the trained group on independent outcome measures (judging facial expressions in photos, cartoons, and non-literal stories) indicates that the skills learned through the computer

program were successfully transferred to real-life scenarios. This generalization of skills is crucial for the intervention to have meaningful impact on social interactions and communication.

- Feasibility and Acceptability: The relatively short duration of the training (ten 30-minute sessions) and the use of an engaging computer program suggest that this type of intervention is feasible and potentially well-accepted by adolescents with ASD. This is important for ensuring adherence to the intervention and promoting its wider implementation.
- Future Directions: This study paves the way for future research exploring the long-term effects of such interventions, as well as their potential for improving other social-communication skills in individuals with ASD. Furthermore, investigating the effectiveness of similar computer-based interventions in younger children or adults with ASD could further expand the scope of their application.

Overall, Dr. Bölte's study offers a promising approach to enhancing emotion recognition abilities in adolescents with ASD, using a targeted and engaging computer-based intervention. The observed improvements in both program-specific and general measures of emotion recognition highlight the potential of such interventions to promote social-emotional development and improve overall quality of life in this population.

(*2) Evaluation of a New Computer Intervention to Teach People with Autism by Miriam Silver*, of St. James hospital Leeds, UK and Peter Oakes of Hull University of UK, Silver and Oakes (2001) carried out a randomized controlled trial to evaluate the effect of a computer program entitled “Emotion Trainer”, developed to train individuals with autism and associated disorders to recognize and predict the emotions of other people.

Silver and Oakes' (2001) randomized controlled trial on the "Emotion Trainer" computer program presents compelling evidence for the potential of computer-based interventions in improving social-emotional understanding in individuals with autism. The study specifically highlights the effectiveness of this program in teaching the complex concept that mental states can elicit emotional responses, even in the absence of actual events.

The aim of the section is to teach that the mental states can provoke an emotional response, even when the event does not occur in reality. The computer design meant that material could be repeated indefinitely without fatigue and at the pace of each individual child. The emotion Trainer was presented in a way that was simple to use and appealing to the participant. Over all, the results suggest positive effects of the Emotion Trainer Computer Program, In terms of improved performance on all measures and significant group by time interaction effects on the emotion cartoons and strange stories.

Key Points and Implications:

- Innovative Approach: The "Emotion Trainer" program introduces a novel method for teaching individuals with autism to recognize and predict emotions, focusing on the connection between mental states and emotional responses. This approach addresses a core challenge faced by individuals with autism, who often struggle to understand the complexities of social-emotional interactions.
- Individualized Learning: The computer-based format of the intervention allows for material to be repeated indefinitely at the learner's own pace, catering to the diverse learning needs of individuals with autism. This personalized approach maximizes engagement and learning potential.
- Positive Outcomes: The study's results indicate improved performance on all measures of emotion recognition and prediction, with significant group-by-time interaction effects observed on the emotion cartoons and strange stories tasks. These findings suggest that the "Emotion Trainer" program effectively enhances social-emotional understanding in individuals with autism.
- Potential for Generalization: The positive outcomes observed in the study suggest that the skills learned through the "Emotion Trainer" program may generalize to real-life situations, leading to improved social interactions and communication. This generalization is crucial for the intervention to have a meaningful impact on the lives of individuals with autism.

- Future Directions: Silver and Oakes' study lays the groundwork for future research exploring the long-term effects of the "Emotion Trainer" program and its potential for improving other aspects of social-emotional functioning in individuals with autism. Further research could also investigate the effectiveness of this program in different age groups and with varying levels of autism severity.

The "Emotion Trainer" computer program represents a promising tool for enhancing social-emotional understanding in individuals with autism. Its innovative approach, personalized learning format, and positive outcomes highlight the potential of computer-based interventions in addressing the unique challenges faced by this population. By fostering the development of crucial social-emotional skills, such interventions can contribute to improved quality of life and greater social integration for individuals with autism.

(3) *Behavioral Improvements Associated with Computer Assisted Instructions for children with Developmental Disability* by Christina Walen, Lars Liden, Brooke Ingersoll, Erik Dallaire, and Sven Liden, TeachTown is a new computer Assisted (CAI) program that utilizes best practices ABA to teach a variety of skills to young children. Parent, Special Education Teachers, and Clinicians who work with children with developmental disorders rated the program highly over all. They indicated that the Teach Town program identifies appropriate teaching goals for young children with developmental disorders and provides an effective way to teach skills.

The research conducted by Whalen et al. highlighting the positive reception of the TeachTown CAI program by parents, educators, and clinicians underscores the significant potential of computer-assisted interventions in addressing the diverse learning needs of young children with developmental disorders.

Key Points and Implications:

- Evidence-Based Approach: The utilization of best practices in Applied Behavior Analysis (ABA) within the TeachTown program ensures a scientifically sound foundation for teaching a variety of skills to these children. This evidence-based

approach instills confidence in stakeholders that the program is grounded in effective instructional strategies.

- Personalized Learning: The positive feedback regarding the program's ability to identify appropriate teaching goals suggests that it offers a degree of individualization, crucial for addressing the unique challenges faced by each child with developmental disorders. This tailored approach can lead to more effective and meaningful learning experiences.
- Multi-Stakeholder Endorsement: The convergence of positive opinions from parents, special education teachers, and clinicians provides strong support for the TeachTown program's efficacy. This broad endorsement highlights its potential to bridge the gap between home, school, and clinical settings, fostering a cohesive and consistent learning environment for the child.
- Accessibility and Engagement: The positive reception of the program by users also hints at its potential to be accessible and engaging for young learners. The incorporation of technology and interactive elements may enhance motivation and facilitate learning, particularly for children who may struggle with traditional teaching methods.
- Future Directions: While this research focuses on the initial impressions of stakeholders, future studies should investigate the long-term impact of the TeachTown program on skill acquisition, behavior, and overall development in children with developmental disorders. Additionally, exploring the program's effectiveness across different settings and with diverse populations could further validate its potential as a valuable educational tool.

The positive evaluation of the TeachTown CAI program signals a promising advancement in the field of computer-assisted interventions for young children with developmental disorders. Its evidence-based approach, personalized learning features, and multi-stakeholder endorsement highlight its potential to enhance learning outcomes and improve the lives of these children. By leveraging technology and incorporating best

practices in ABA, TeachTown offers a valuable tool for parents, educators, and clinicians working to support the development and growth of these young learners.

(4) *Cosmos Learning System (CLS) with children with Autism* by

Linwood School in Elilicott City in Maryland. Cosmos Play and Learn Software includes (1) Color ID/Sequence (2) Shape Identificaiton (3) Number Identification (4) Written Word/Text (5) Relative Amount (6) Relative Size (7) Directions (8) Prepositions.

A computerized tool such as Cosmo's Learning System has a potential to make great improvements in the child's Quality of Life and in the Therapist's Ability to monitor and reward progress.

If results had been successful for most of the studies in USA, Europe, and Germany, why won't we bring it here in the Philippines? What is holding us back from implementing successful stories of various researchers in abroad?

The researcher seeks to quench his thirst for answers on how and why CAI has not been an eye for Intervention here in the Philippines? Is it because we are left behind due to economic crisis, or is it because Researches of CAI does not capture the interests of our Occupational Therapist here in the Philippines. On the other hand, thus CAI post threat to the said profession of being an Occupational Therapist here in the Philippines?

Statement of the Problem

Despite the growing evidence supporting the efficacy of Computer-Assisted Instruction (CAI) in enhancing occupational therapy interventions for children with Autism Spectrum Disorder (ASD), its utilization and impact within the Philippine context remain underexplored. This knowledge gap hinders the development of evidence-based guidelines and the widespread adoption of CAI in Filipino occupational therapy practice, potentially limiting the therapeutic benefits for children with ASD.

The statement of the problem in the research is centered around the underutilization of Computer-Assisted Instruction (CAI) in occupational therapy practice within the Philippines, particularly for children with Autism Spectrum Disorder (ASD). The research

aims to address this gap by investigating the current utilization patterns, perceived benefits, and challenges associated with CAI implementation, as well as its impact on various patient outcomes.

Objective of the Study

A lot of studies have been already made towards incorporation of Computer Assisted Instruction (CAI). Other countries around the world, especially in most developed countries, showed comparative results and thus prove that there are real effects. Several of them even gave positive results with regard to the incorporation of the method to their traditional means of treatment especially with those patients with various pediatric cases, including those with autism spectrum disorder.

Because of this the researcher is curious on how extensive do Occupational Therapists here in the Philippines adopt CAI. Although we are a third (3rd) world country, the researcher believes that there won't be any hindrance in the incorporation of such assistive method

of treatment nor would it threaten the growth of such profession here in the country. The researcher posits that such incorporation of CAI with regard to the treatment of patients with autism spectrum disorder would be beneficial.

Thus, these are the problems the researcher would like to resolve and point out:

1. Is CAI being utilized here in the Philippines by registered Occupational Therapists as an assistive learning medium?
2. How long is CAI being implemented here in the Philippines by working registered Occupational Therapists?
3. What are the different cases where CAI is applied?
4. What kind of environment setting is CAI frequently implemented?
5. What type of pediatric cases is CAI frequently applied?

6. How frequent is CAI applied by registered Occupational Therapists here in the Philippines?
7. What are the possible effects of CAI to various patients?
8. What are the benefits and drawback of CAI?
9. What is the best age range of a patient with a pediatric case to apply CAI?
10. Can the application of CAI to patients with pediatric cases helps with the development of various Performance Areas and Performance Skills of children?

Significance of the Study

The researcher sees the need for patients with various pediatric cases, especially those children with Autistic Spectrum Disorder or autism to communicate effectively and amplify their collaborative work and motivation thereby increasing their concentration to learn and participate within the real world. She also was able to note the different advancements in technology. Hence, this study aims to advocate the application of CAI to all patients with pediatric cases, especially those children with Autistic Spectrum Disorder or autism.

The pedagogical objective of this study is to show that CAI can further help patients with various pediatric cases particularly those children with Autistic Spectrum Disorder, to learn and interact more effectively with the people around him/her, such as the Internet and other multimedia tools and replace the traditional means of teaching and treatment. Via the world-wide web and with the help of computers as an assistive medium of instruction apart from the traditional means as a form of treatment it has also been shown by previous studies that the attention of children with Autistic Spectrum Disorder or autism is easily drawn for them to improve and mingle more easily with other people.

Various studies have also been made internationally as to the application of CAI; the results thereof were quite impressive. However, the researcher noticed that in the Philippines despite of the technological advancements there are only a few schools,

hospitals and institution which had dared to venture in the use of such approach and most of it are private schools and hospitals that deal with normal children.

Thus, this study is important to advocate the adoption of CAI as an assistive learning and treatment tool of a number of registered Occupational Therapists here in the Philippines. The study is also important to show the extent and frequency of the application of CAI by registered Filipino Occupational Therapists. Significantly, this study will also provide the experiences of registered Filipino Occupational Therapists on what type of environment setting is CAI being implemented. The study will also show the possible effects of the implementation of CAI, including its advantages and disadvantages. Furthermore, the study will present the notions of various registered Filipino Occupational Therapists regarding the best age range of patients with pediatric cases that would benefit from the application of CAI. Finally, the study will present the perceptions of the respondent Occupational Therapist on whether the application of CAI would help improve the Performance Areas and Skills of patients with pediatric cases.

OBJECTIVES:

C.1. GENERAL OBJECTIVE:

The main goal of the study is to explore how Computer Assisted Instruction (CAI) can be used effectively as a tool, for children those with Autism Spectrum Disorder (ASD). The research aims to showcase CAI as a teaching aid for Filipino Occupational Therapists emphasizing its effects on pediatric patients, including those with autism. Additionally, it seeks to evaluate the use of CAI in selected clinics and hospitals in Metro Manila advocating for its adoption as a standard part of treatment plans for children. By delving into the role of CAI in therapy the study aims to highlight its advantages and potential, for enhancing patient outcomes while also pinpointing areas that can be improved to better integrate it into practices.

This research investigation aims to conduct a rigorous examination of the efficacy and implementation of Computer-Assisted Instruction (CAI) as a therapeutic tool for children with Autism Spectrum Disorder (ASD) in the context of occupational therapy within the

Philippines. The study will systematically analyze the impact of CAI interventions on a spectrum of patient outcomes, including but not limited to social communication, adaptive behavior, and cognitive skills. Moreover, it will undertake a critical appraisal of the current utilization of CAI within selected clinics and hospitals in Metro Manila, with a specific focus on discerning any barriers to adoption or implementation challenges.

By comprehensively exploring CAI's role within the therapeutic landscape, this study aspires to elucidate its potential advantages in facilitating enhanced patient outcomes for children with ASD. Furthermore, it will endeavor to identify opportunities for refinement and optimization, thereby contributing to the development of evidence-based guidelines for the seamless integration of CAI into standard occupational therapy practices in the Philippines. Ultimately, the insights generated from this research endeavor will serve to inform and empower occupational therapists, enabling them to leverage the full potential of CAI in their clinical practice and thereby elevate the standard of care provided to children with ASD.

C.2. SPECIFIC OBJECTIVES:

This study aims to investigate how Computer Assisted Instruction (CAI) is used as a teaching aid and therapy method, in therapy for a diverse group of children in Metro Manila especially those with Autism Spectrum Disorder. The main goal is to understand how Filipino Occupational Therapists incorporate CAI into their practices to help children learn and meet their needs. The study will also look into where and why CAI's commonly used, along with the types of pediatric conditions it helps address.

To determine if using CAI in the Philippines healthcare system is practical and sustainable the research will explore how available CAI materials are. If scarce how they are obtained and at what cost. A key part of this investigation involves finding out how widely CAI is currently used in Occupational Therapy in the Philippines. To fully assess CAIs effectiveness the study will carefully examine its impact on the well-being and development of children under the care of Filipino Occupational Therapists, in Metro Manila.

An, in depth study will be conducted to examine the pros and cons of using computer assisted instruction (CAI) in occupational therapy treatments. The goal is to gather insights that can guide decision making based on evidence.

The research aims to determine the age group for children to benefit from CAI interventions drawing from the knowledge and experience of certified Occupational Therapists from the Philippines.

Additionally, the study will explore how CAI influences the enhancement of skills and performance areas in children, with pediatric conditions shedding light on the diverse therapeutic potential

SCOPE AND DELIMITATION:

The present study derived its data from a cohort of thirty (30) duly licensed and/or registered Filipino Occupational Therapists practicing within the geographical confines of Metro Manila, who served as primary respondents and informational resources for the research endeavor. Inclusion criteria for participant selection mandated a minimum of one (1) year of accumulated clinical experience within diverse practice settings, encompassing Adult Physical Dysfunction, Pediatrics, Psychosocial Dysfunction, Community-Based Rehabilitation, or academic environments. To ensure methodological rigor, the study population was delimited to Filipino Occupational Therapists actively engaged in professional practice within the Metro Manila region and possessing a minimum of one year of clinical experience. Occupational Therapists of non-Filipino origin and those practicing outside the designated geographical area were excluded from the study sample.

Data collection was facilitated through the distribution of structured questionnaires to each participant, with subsequent retrieval after a predetermined time frame. While inquiries pertaining to research topics were encouraged, requests for definitional clarification were explicitly discouraged. The investigative focus was primarily centered on eliciting the perceptions and experiential knowledge of the respondent Filipino Occupational Therapists.

A notable limitation of the study resides in the relatively small sample size and the circumscribed geographical scope, confined to Metro Manila. The participant pool was further restricted to licensed Filipino Occupational Therapists affiliated with a specific set of private hospitals and clinics, namely: the Philippine Orthopedic Center, the Philippine Children's Medical Center, Quality Life Discovery, Terapiya, Our Lady of Lourdes Hospital, Theraneeds, Medical City, and the Philippine General Hospital.

The study is also limited to a group of professional licensed Filipino Occupational Therapists who handles patients with different degrees and types of pediatric cases.

The researcher also aims to prove that computers can help treat patients with various types and degrees of pediatric cases, particularly those children with Autistic Spectrum Disorder or autism and are connected in selected private hospitals and clinics here in Metro Manila.

The research would focus on the use of computers as an assistive method to the traditional treatment done by most licensed Filipino Occupational therapy here in the Philippines. In addition, the research will provide on how CAI can help develop the following Performance Areas and Skills of Children with special pediatric cases, namely,

1. Activities Daily Living (ADL);
2. Play;
3. School Work/Education
4. Social Participation;
5. Sleep and Rest
6. Leisure;
7. Communication and other Interaction Skills;
8. Motor; and,
9. Process

Likewise the researcher focused on the articles and researches made in other countries that have been successful in adopting CAI to their treatment plan, as well as its effectiveness and progress.

This research is focused on a research strategy using data obtained only from electronic databases, such as the internet. The researcher also searched libraries from Universities and Colleges within Metro Manila and screened for references that are relevant to the study, reviews and randomized controlled trials through survey.

DEFINITION OF TERMS:

Autism - is a brain development disorder characterized by impaired social interaction and communication, and by restricted and repetitive behavior. These signs all begin before a child is three years old. The autism spectrum disorders

(ASD) also include related conditions with milder signs and symptoms.

Autism affects many parts of the brain; how this occurs is not understood. Parents usually notice signs in the first two years of their child's life. Although early behavioral or cognitive intervention can help children gain self-care, social, and communication skills, there is no

known cure. Few children with autism live independently after reaching adulthood, but some become successful, and an autistic culture has developed, with some seeking a cure and others believing

that autism is a condition rather than a disorder.

Computer Assisted Instruction or CAI is a program of instructional material presented by means of a computer or computer systems.

E-Learning - Electronic learning (or e-Learning or eLearning) is a type of Technology supported education/learning (TSL) where the medium of instruction is computer technology, particularly involving digital technologies. E-learning has been defined as "pedagogy empowered by digital technology". In some instances, no in-person interaction takes place. E-learning is used interchangeably in a wide variety of contexts. In

companies, it refers to the strategies that use the company network to deliver training courses to employees. In the USA, it is defined as a planned teaching/learning experience that uses a wide spectrum of technologies, mainly Internet or computer-based, to reach learners. Lately in most Universities, e-learning is used to define a specific mode to attend a course or programme of study where the students rarely, if ever, attend face-to-face for on-campus access to educational facilities, because they study online.

Technology Supported Learning (TSL) - Technology Supported Learning is a new approach of acquiring knowledge which offers open learning opportunities to people unable to use traditional educational systems. Open learning is a flexible learning system designed to help the young and adult students alike fit their studies into their work schedules and family responsibilities. Distance education through Technology Supported Learning is suitable for people in many different situations: people who work shifts, people living in remote areas, homemakers with young children, people with disabilities, senior citizens, members of the armed forces, and people who are incarcerated. Others may wish to undertake distance education for personal satisfaction and enjoyment.

Distance learning is not for everyone. Courses are demanding and require self-discipline and long-term planning. The responsibility for completing the course is the student's. Technology Supported Learning students must have a desire to learn that equals their need to learn. The benefits are many, and the learning experience itself can be especially rewarding for the self-motivated learner.

Multimedia - Multimedia is media and content that utilizes a combination of different content forms. The term can be used as a noun (a medium with multiple content forms) or as an adjective describing a medium as having multiple content forms. The term is used in contrast to media which only utilize traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, and interactivity content forms.

Multimedia is usually recorded and played, displayed or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of

a live performance. Multimedia (as an adjective) also describes electronic media devices used to store and experience multimedia content. Multimedia is similar to traditional mixed media in fine art, but with a broader scope. The term "rich media" is synonymous for interactive multimedia. Hypermedia can be considered one particular multimedia application.

Computer Based Learning (CBL) - Computer Based Learning, sometimes abbreviated to CBL, refers to the use of computers as a key component of the educational environment. While this can refer to the use of computers in a classroom, the term more broadly refers to a structured environment in which computers are used for teaching purposes. The concept is generally seen as being distinct from the use of computers in ways where learning is at least a peripheral element of the experience (e.g. computer games and web browsing).

Chapter II

REVIEW OF RELATED LITERATURE

Technological Advancements and Innovations in CAI for Pediatric Use

The field of care is constantly evolving due, to progress especially in the realm of computer assisted instruction. Recent innovations have significantly improved the integration of CAI into treatment strategies enhancing experiences for young patients in a more engaging and effective manner. One key development is the increased utilization of point of care ultrasound, which enables real time imaging and diagnosis without radiation exposure to children. This technology not facilitates accurate assessments but also supports various procedural interventions proving to be a valuable asset in pediatric healthcare.

Additionally, the implementation of health records has transformed workflows by enhancing data management and accessibility. The widespread adoption of EHRs offers healthcare providers a platform for decision making support allowing them to monitor progress evaluate treatment outcomes and make informed decisions based on comprehensive data. By combining records with CAI tools treatment plans can be personalized effectively to cater to each childs requirements through tailored educational and therapeutic intervention simulation training has made strides by providing healthcare professionals with environments for honing their skills. This technology creates a setting for practicing procedures which is essential for maintaining proficiency, in pediatric practices and cardiorespiratory resuscitation techniques.

With hands on learning opportunities becoming scarce simulation training is increasingly valued for skill enhancement. Boosting confidence. The evolution of Computer Assisted Instruction (CAI) tools integrates these advancements resulting in interactive and adaptable educational software. These tools leverage intelligence to customize learning experiences based on each childs needs enhancing engagement and effectiveness. AI powered CAI programs can adjust content difficulty levels offer feedback and monitor progress enabling a personalized and responsive approach, to pediatric education.

Virtual reality and augmented reality technologies are also playing a role in CAI within healthcare. Virtual reality immerses children in simulated worlds for both therapeutic purposes while augmented reality overlays information onto the physical environment to provide interactive learning experiences. These technologies enhance the learning process. Are especially beneficial for teaching concepts or practicing procedural skills in a controlled environment.

Furthermore, incorporating gamification into CAI has proven to boost motivation and engagement among patients. By integrating game elements such as rewards, challenges and progress tracking CAI tools can make learning more enjoyable and motivating for children.

This ultimately leads to outcomes and increased adherence, to treatment plans.

Advancements, in technology have recently broadened the reach of computer assisted instruction (CAI) tools. The widespread use of smartphones and tablets has made it easier to access apps and therapy programs from any location offering increased flexibility and convenience in providing healthcare for children. These mobile platforms promote engagement and learning beyond medical settings serving as a valuable supplement to face to face treatments.

The incorporation of tech further enhances the capabilities of CAI. Wearable devices can track health metrics. Deliver real time feedback, which can be integrated into CAI initiatives to provide a more holistic approach to managing pediatric conditions. This data centric strategy aids in tailoring treatment plans and adapting interventions based on each childs requirements and progress.

As CAI technology progresses there is a growing emphasis on ensuring that these tools are accessible and inclusive to all. Initiatives are underway to develop CAI programs that meet the needs of children including those with disabilities or special educational needs. This inclusiveness plays a role, in guaranteeing that all young patients can take advantage of advancements.

The evolution of CAI technologies is revolutionizing the delivery of care by enhancing its effectiveness, interactivity and personalization.

These new developments offer hope, for boosting achievements improving skill acquisition and offering assistance to children in healthcare along with their families. With the progress of technology, it is probable that Computer Assisted Instruction (CAI) will become more pivotal in influencing the direction of healthcare, in the future.

The future of computer-assisted tools in pediatrics holds tremendous promise. As technology continues to evolve, we can anticipate even more sophisticated and impactful innovations. However, realizing this potential requires ongoing research, collaboration between healthcare professionals and technologists, and careful consideration of ethical and societal implications.

By embracing technology thoughtfully and responsibly, we can harness its power to create a healthier, happier future for children worldwide.

Parental and Caregiver Perspectives on CAI

Parents of kids and teenagers, with atrophy face a variety of emotional and practical challenges that greatly affect their daily routines. These challenges mainly arise from the progressive nature of SMA, which requires care and attention. The physical, emotional and financial strains linked to caring for a child with SMA can be daunting, resulting in stress for caregivers and unmet family needs. This is further complicated by the struggles of navigating healthcare systems organizing treatments and communicating with healthcare professionals.

The burden on parents caring for children with SMA involves not the aspects but also the emotional impact of witnessing their childs condition worsen over time. This emotional toll can lead to feelings of anxiety, stress and sadness intensifying the challenges faced by caregivers. Additionally managing costs, buying equipment and making essential home adjustments contribute to the overall pressure experienced by families.

To tackle these issues effectively and alleviate the strain on families it is crucial to integrate parental caregiving needs into care plans for SMA patients. Integrated care plans aim to offer an approach, to managing a patient's condition while also taking into account the support required by caregivers.

By tending to the social needs of parents these care plans can enhance their happiness and ability to effectively nurture their children.

Enhancing the well-being of caregivers entails offering them access, to services, resources and interventions that assist them in handling stress and coping with the demands of caregiving. Such assistance may involve therapy, group support sessions break from caregiving responsibilities and financial aid programs. By addressing these needs caregivers can experience stress levels. Improved mental wellness, which in turn boosts their capacity to provide top notch care for their children.

Holistic care plans should also prioritize preventing and managing mental health issues that may arise from caregiver strain. Caregivers who feel overwhelmed by their duties might overlook their health needs leading to problems like burnout, ongoing tiredness and other health concerns. Dealing with these challenges through support services can help prevent or alleviate the impact of caregiver stress on both the caregiver themselves well as their child.

Future studies should broaden their scope beyond evaluating quality of life and caregiver related burden. It is crucial to explore the significance of symptoms reported by caregivers. Understanding how these symptoms influence the happiness and functioning of caregivers can offer insights, into the specific kinds of support that prove most beneficial.

Research should focus on finding the ways to support caregivers of children, with SMA. This may involve studying support programs assessing their impact and customizing them to suit each family's needs. By prioritizing the significance of reported symptoms researchers can help establish evidence-based practices that can enhance the support services to families.

Parenting a child with spinal muscular atrophy (SMA) presents a complex tapestry of challenges encompassing physical, emotional, and logistical dimensions. The progressive nature of SMA necessitates an ongoing and evolving approach to care that recognizes and addresses the holistic needs of both the child and the family unit.

From an occupational therapist's perspective, it is imperative to acknowledge the profound emotional and psychological impact that SMA can have on parental caregivers. Witnessing the progression of their child's condition, navigating the intricacies of the medical system, and confronting the financial realities of care can engender significant emotional distress, including anxiety, chronic stress, depression, and feelings of isolation.

Moreover, the demands of daily life – adapting the home environment, managing complex medical regimens, and balancing caregiving with other family and personal responsibilities – can profoundly disrupt routines and occupations essential to the overall well-being of the family unit.

Therefore, a truly effective and compassionate model of SMA care must transcend the provision of medical treatment for the child alone and embrace a comprehensive approach that supports the well-being of parental caregivers. This necessitates the intentional integration of caregiver support into the care plan, ensuring access to resources and interventions that empower parents to effectively manage stress, develop adaptive coping mechanisms, and navigate the complexities of their caregiving journey with resilience.

Occupational therapists, with their expertise in promoting participation in meaningful activities and fostering adaptive coping strategies, are uniquely positioned to facilitate this process. By offering individualized assessments, tailored interventions, and ongoing support, occupational therapists can equip caregivers with the skills and strategies necessary to navigate the challenges of SMA, thereby enhancing their overall quality of life and fostering their capacity to provide optimal care for their children.

Beyond direct intervention, research plays a critical role in informing evidence-based practice and advocating for the needs of families affected by SMA. Future research endeavors should prioritize a deeper exploration of the specific impact of caregiver-

reported symptoms on their daily functioning and overall well-being. This granular understanding will serve as the foundation for the development of targeted and effective support services that are responsive to the unique needs of each family, fostering resilience and promoting optimal outcomes for both caregivers and their children.

By prioritizing the holistic needs of families affected by SMA and recognizing the indispensable role of caregivers, we can create a more supportive and empowering environment for all involved, fostering an enhanced quality of life and well-being for children and families navigating the complexities of SMA.

Research should look into how integrated care pathways can be developed to cater to caregivers needs. By evaluating the extent to which existing care pathways incorporate caregiver assistance and pinpointing areas for enhancement, both caregivers and their children can experience outcomes to improve the well-being of families affected by SMA and ensure that caregivers have the resources and assistance to fulfill their responsibilities effectively. By addressing caregivers' psychosocial requirements and offering support services stress levels can decrease, leading to enhanced family welfare. Children, with SMA are likely to benefit when their caregivers are adequately equipped to provide them with the required care and support.

FOREIGN LITERATURE

Autism is one of the five pervasive developmental disorders (PDD), which are characterized by widespread abnormalities of social interactions and communication, and severely restricted interests and highly repetitive behavior. These symptoms do not imply sickness, fragility, or emotional disturbance.

Of the five PDD forms, Asperger syndrome is closest to autism in signs and likely causes; Rett syndrome and childhood disintegrative disorder share several signs with autism, but may have unrelated causes; PDD not otherwise specified (PDD-NOS) is diagnosed when the criteria are not met for a more specific disorder. Unlike autism, Asperger's has no substantial delay in language development. The terminology of autism can be bewildering, with autism, Asperger's and PDD-NOS often called the autism spectrum disorders (ASD)

or sometimes the autistic disorders, whereas autism itself is often called autistic disorder, childhood autism, or infantile autism. In this article, autism refers to the classic autistic disorder; in clinical practice, though, autism, ASD, and PDD are often used interchangeably. ASD, in turn, is a subset of the broader autism phenotype (BAP), which describes individuals who may not have ASD but do have autistic-like traits, such as avoiding eye contact.

The manifestations of autism cover a wide spectrum, ranging from individuals with severe impairments—who may be silent, mentally disabled, and locked into hand flapping and rocking—to high functioning individuals who may have active but distinctly odd social approaches, narrowly focused interests, and verbose, pedantic communication. Sometimes the syndrome is divided into low-, medium- and high-functioning autism (LFA, MFA, and HFA), based on IQ thresholds, or on how much support the individual requires in daily life; these subdivisions are not standardized and are controversial. Autism can also be divided into syndromal and non-syndromal autism, where the former is associated with severe or profound mental retardation or a congenital syndrome with physical symptoms, such as tuberous sclerosis. Although individuals with Asperger's tend to perform better cognitively than those with autism, the extent of the overlap between Asperger's, HFA, and non-syndromal autism is unclear.

Some studies have reported diagnoses of autism in children due to a loss of language or social skills, as opposed to a failure to make progress, typically from 15 to 30 months of age. The validity of this distinction remains controversial; it is possible that regressive autism is a specific subtype.

The inability to identify biologically meaningful subpopulations has hampered research into causes. It has been proposed to classify autism using genetics as well as behavior, with the name Type 1 autism denoting rare autism cases that test positive for a mutation in the gene contactin associated protein-like 2 (CNTNAP2).

A few examples of autistic symptoms and treatments were described long before autism was named. The Table Talk of Martin Luther contains the story of a 12-year-old boy who

may have been severely autistic. According to Luther's notetaker Mathesius, Luther thought the boy was a soulless mass of flesh possessed by the devil, and suggested that he be suffocated. The Wild Boy of Aveyron, a feral child caught in 1798, showed several signs of autism; the medical student Jean Itard treated him with a behavioral program designed to help him form social attachments and to induce speech via imitation.

The New Latin word autismus (English translation autism) was coined by the Swiss psychiatrist Eugen Bleuler in 1910 as he was defining symptoms of schizophrenia. He derived it from the Greek word autos (αὐτός, meaning self), and used it to mean morbid self-admiration, referring to "autistic withdrawal of the patient to his fantasies, against which any influence from outside becomes an intolerable disturbance".

The word autism first took its modern sense in 1938 when Hans Asperger of the Vienna University Hospital adopted Bleuler's terminology autistic psychopaths in a lecture in German about child psychology. Asperger was investigating a form of ASD now known as

Asperger syndrome, though for various reasons it was not widely recognized as a separate diagnosis until 1981. Leo Kanner of the Johns Hopkins Hospital first used autism in its modern sense in English when he introduced the label early infantile autism in a 1943 report of 11 children with striking behavioral similarities. Almost all the characteristics described in Kanner's first paper on the subject, notably "autistic aloneness" and "insistence on sameness", are still regarded as typical of the autistic spectrum of disorders. It is not known whether Kanner derived the term independently of Asperger.

Kanner's reuse of autism led to decades of confused terminology like infantile schizophrenia, and child psychiatry's focus on maternal deprivation during the mid-1900s led to misconceptions of autism as an infant's response to "refrigerator mothers". Starting in the late 1960s autism was established as a separate syndrome by demonstrating that it is lifelong, distinguishing it from mental retardation and schizophrenia and from other developmental disorders, and demonstrating the benefits of involving parents in active programs of therapy. As late as the mid-1970s there was little evidence of a genetic role in autism; now it is thought to be one of the most heritable of all psychiatric conditions.

Although the rise of parent organizations and the destigmatization of childhood ASD have deeply affected how we view ASD, parents continue to feel social stigma in situations where their autistic children's behaviors are perceived negatively by others, and many primary care physicians and medical specialists still express some beliefs consistent with outdated autism research. The Internet has helped autistic individuals bypass nonverbal cues and emotional sharing that they find so hard to deal with, and has given them a way to form online communities and work remotely. Sociological and cultural aspects of autism have developed: some in the community seek a cure, while others believe that autism is simply another way of being

Most recent reviews tend to estimate a prevalence of 1–2 per 1,000 for autism and close to 6 per 1,000 for ASD; because of inadequate data, these numbers may underestimate ASD's true prevalence. PDD-NOS cases are the vast majority of ASD, Asperger's prevalence is about 0.3 per 1,000, and the remaining ASD forms are much rarer. The number of reported cases of autism increased dramatically in the 1990s and early 2000s. This increase is largely attributable to changes in diagnostic practices, referral patterns, availability of services, age at diagnosis, and public awareness, though unidentified contributing environmental risk factors cannot be ruled out. It is unknown whether autism's prevalence increased during the same period; a real increase would suggest directing more attention and funding toward changing environmental factors instead of continuing to focus on genetics.

Boys are at higher risk for ASD than girls. The sex ratio averages 4.3:1 and is greatly modified by cognitive impairment: it may be close to 2:1 with mental retardation and more than 5.5:1 without. The risk of autism is also associated with several prenatal and perinatal risk factors. A 2007 review of risk factors found associated parental characteristics that included advanced maternal age, advanced paternal age, and maternal place of birth outside Europe or North America, and also found associated obstetric conditions that included low birth weight and gestation duration, and hypoxia during childbirth.

Autism is associated with several other conditions:

Genetic disorders. About 10–15% of autism cases have an identifiable Mendelian (single-gene) condition, chromosome abnormality, or other genetic syndrome, and ASD is associated with several genetic disorders.

Mental retardation. The fraction of autistic individuals who also meet criteria for mental retardation has been reported as anywhere from 25% to 70%, a wide variation illustrating the difficulty of assessing autistic intelligence. For ASD other than autism, the association with mental retardation is much weaker.

Epilepsy, with variations in risk of epilepsy due to age, cognitive level, and type of language disorder.

Anxiety of various types in children and adolescents with ASD, with symptoms including generalized anxiety and separation anxiety.

Several metabolic defects, such as phenylketonuria, are associated with autistic symptoms. Minor physical anomalies are significantly increased in the autistic population.

Preempted diagnoses. Although the DSM-IV rules out concurrent diagnosis of many other conditions along with autism, the full criteria for ADHD, Tourette syndrome, and other of these conditions are often present and these comorbid diagnoses are increasingly accepted.

It has long been presumed that there is a common cause at the genetic, cognitive, and neural levels for autism's characteristic triad of symptoms. However, there is increasing suspicion that autism is instead a complex disorder whose core aspects have distinct causes that often co-occur.

Deletion, duplication and inversion are all chromosome abnormalities that have been implicated in autism. Autism has a strong genetic basis, although the genetics of autism are complex and it is unclear whether ASD is explained more by multigene interactions or by rare mutations with major effects. Complexity arises due to interactions among multiple

genes, the environment, and epigenetic factors which do not change DNA but are heritable and influence gene

expression. Early studies of twins estimated heritability explains more than 90% of the risk of autism, assuming a shared environment and no other genetic or medical syndromes. However, most of the mutations that increase autism risk have not been identified. Typically, autism cannot be traced to a Mendelian (single-gene) mutation or to a single chromosome abnormality like Angelman syndrome or fragile X syndrome, and none of the genetic syndromes associated with ASDs has been shown to selectively cause ASD. Numerous candidate

genes have been located, with only small effects attributable to any particular gene. The large number of autistic individuals with unaffected family members may result from copy number variations—spontaneous deletions or duplications in genetic material during meiosis. Hence, a substantial fraction of autism cases may be traceable to genetic causes that are highly heritable but not inherited: that is, the mutation that causes the autism is not present in the parental genome.

Gene replacement studies in mice suggest that autistic symptoms are closely related to later developmental steps that depend on activity in synapses and on activity-dependent changes, and that the symptoms may be reversed or reduced by replacing or modulating gene function after birth. All known teratogens (agents that cause birth defects) related to the risk of autism appear to act during the first eight weeks from conception, and though this does not exclude the possibility that autism can be initiated or affected later, it is strong evidence that autism arises very early in development. Although evidence for other environmental causes is anecdotal and has not been confirmed by reliable studies, extensive searches are underway. Environmental factors that have been claimed to contribute to or exacerbate autism, or may be important in future research, include certain foods, infectious disease, heavy metals, solvents, diesel exhaust, PCBs, phthalates and phenols used in plastic products, pesticides, brominated flame retardants, alcohol, smoking, illicit drugs, vaccines, and prenatal stress. Although parents may first become aware of autistic symptoms in their child around the time of a routine vaccination (and

parental concern about vaccines has led to a decreasing uptake of childhood immunizations and an increasing likelihood of measles outbreaks), the overwhelming majority of scientific studies show no causal association between the measles-mumps-rubella vaccine and autism, and there is no convincing scientific evidence showing that the vaccine preservative thiomersal helps cause autism.

In Education nowadays, multimedia is used to produce computer-based training courses (popularly called CBTs) and reference books like encyclopedia and almanacs. A CBT lets the user go through a series of presentations, text about a particular topic, and associated illustrations in various information formats. Edutainment is an informal term used to describe combining education with entertainment, especially multimedia entertainment.

Learning theory in the past decade has expanded dramatically because of the introduction of multimedia. Several lines of research have evolved (e.g. Cognitive load, Multimedia learning, and the list goes on). The possibilities for learning and instruction are nearly

Endless Multimedia represents the convergence of text, pictures, video and sound into a single form. The power of multimedia and the Internet lies in the way in which information is linked.

Multimedia and the Internet require a completely new approach to writing. The style of writing that is appropriate for the 'on-line world' is highly optimized and designed to be able to be quickly scanned by readers.

A good site must be made with a specific purpose in mind and a site with good interactivity

and new technology can also be useful for attracting visitors. The site must be attractive and innovative in its design, function in terms of its purpose, easy to navigate, frequently updated and fast to download.

When users view a page, they can only view one page at a time. As a result, multimedia users must create a ‘mental model of information structure’.

Patrick Lynch, author of the Yale University Web Style Manual, states that users need predictability and structure, with clear functional and graphical continuity between the

various components and subsections of the multimedia production. In this way, the home page of any multimedia production should always be a landmark, able to be accessed from anywhere within a multimedia piece.

As early as 1993, Graziadei, W. D. described an online computer-delivered lecture, tutorial and assessment project using electronic Mail, two VAX Notes conferences and Gopher/Lynx together with several software programs that allowed students and instructor to create a Virtual Instructional Classroom Environment in Science (VICES) in Research, Education, Service & Teaching (REST). In 1997 Graziadei, W.D., et al., published an article entitled "Building Asynchronous and Synchronous Teaching-Learning Environments: Exploring a Course/Classroom Management System Solution". They described a process at the State University of New York (SUNY) of evaluating products and developing an overall strategy for technology-based course development and management in teaching-learning. The product(s) had to be easy to use and maintain, portable, replicable, scalable, and immediately affordable, and they had to have a high probability of success with long-term cost-effectiveness. Today many technologies can be, and are, used in e-Learning, from blogs to collaborative software, e-Portfolios, and virtual classrooms. Most eLearning situations use combinations of these techniques.

Along with the terms learning technology, instructional technology, and Educational Technology, the term is generally used to refer to the use of technology in learning in a much broader sense than the computer-based training or Computer Aided Instruction of the 1980s. It is also broader than the terms Online Learning or Online Education which generally refer to purely web-based learning. In cases where mobile technologies are used, the term M-learning has become more common. E-learning, however, also has implications beyond just the technology and refers to the actual learning that takes place using these systems.

E-learning is naturally suited to distance learning and flexible learning, but can also be used in conjunction with face-to-face teaching, in which case the term Blended learning is commonly used. E-Learning pioneer Bernard Luskin argues that the "E" must be understood to have broad meaning if e-Learning is to be effective. Luskin says that the

"e" should be interpreted to mean exciting, energetic, enthusiastic, emotional, extended, excellent, and educational in addition to "electronic" that is a traditional national interpretation. This broader interpretation allows for 21st century applications and brings learning and media psychology into the equation.

In higher education especially, the increasing tendency is to create a Virtual Learning Environment (VLE) (which is sometimes combined with a Management Information System (MIS) to create a Managed Learning Environment) in which all aspects of a course are handled through a consistent user interface standard throughout the institution. A growing number of physical universities, as well as newer online-only colleges, have begun to offer a select set of academic degree and certificate programs via the Internet at a wide range of levels and in a wide range of disciplines. While some programs require students to attend some campus classes or orientations, many are delivered completely online. In addition, several universities offer online student support services, such as online advising and registration, e-counseling, online textbook purchase, student governments and student newspapers.

E-Learning can also refer to educational websites such as those offering learning scenarios, worksheets and interactive exercises for children. The term is also used extensively in the business sector where it generally refers to cost-effective online training.

E-Learning lessons are generally designed to guide students through information or to help students perform in specific tasks. Information based e-Learning content communicates information to the student. Examples include content that distributes the history or facts related to a service, company, or product. In information-based content, there is no specific skill to be learned. In performance-based content, the lessons build off of a procedural skill in which the student is expected to increase proficiency.

Much effort has been put into the technical reuse of electronically-based teaching materials and in particular creating or re-using Learning Objects. These are self-contained units that are properly tagged with keywords, or other metadata, and often stored in an XML file format. Creating a course requires putting together a sequence of learning

objects. There are both proprietary and open, non-commercial and commercial, peer-reviewed repositories of learning objects such as the Merlot repository.

A common standard format for e-learning content is SCORM whilst other specifications allow for the transporting of "learning objects" (Schools Interoperability Framework) or categorizing meta-data (LOM).

These standards themselves are early in the maturity process with the oldest being 8 years old. They are also relatively vertical specific: SIF is primarily pK-12, LOM is primarily Corp, Military and Higher Ed, and SCORM is primarily Military and Corp with some Higher Ed. PESC- the Post-Secondary Education Standards Council- is also making headway in developing standards and learning objects for the Higher Ed space, while SIF is beginning to seriously turn towards Instructional and Curriculum learning objects.

In the US pK12 space there are a host of content standards that are critical as well- the NCES data standards are a prime example. Each state government's content standards and achievement benchmarks are critical metadata for linking e-learning objects in that space.

An excellent example of e-learning that relates to knowledge management and reusability is Navy E-Learning, which is available to Active Duty, Retired, or Disable Military members. This on-line tool provides certificate courses to enrich the user in various subjects related to military training and civilian skill sets. The e-learning system not only provides learning objectives, but also evaluates the progress of the student and credit can be earned toward higher learning institutions. This reuse is an excellent example of knowledge retention and the cyclical process of knowledge transfer and use of data and records.

Computer Assisted Instruction, previously known as Computer Based Training, is a learning method that uses computers to enhance the teaching and learning processes. CAI programs are interactive and engaging, incorporating animations, sounds, and demonstrations to explain concepts clearly. They provide flexibility for learners to

progress at their own pace, work independently, or collaborate on problem-solving tasks. One of the key benefits of CAI is the immediate feedback it offers, informing learners about the accuracy of their responses and providing guidance for improvement. This personalized approach to learning can be particularly advantageous for students with disabilities. CAI captures learners' interest through its features and challenges, fostering a sense of competition that encourages engagement. Additionally, CAI allows for tailored instruction to meet the needs of students with varying abilities.

By moving away from traditional teacher-led or group instruction methods, CAI creates a stimulating and dynamic learning environment. (Wawasan Open University, 2016).

LOCAL LITERATURE:

In the Philippines there are still a few studies conducted with regard to awareness of autism in the country. However, several non- government offices and agencies are conducting and providing their own research and information with regard to autism. Such agencies like that of Autism Society of the Philippines is informing and persuading a lot of families in the country that Autism per se should not be seen as threat and a burden in case it should be present in their child. They are trying to inform that such deficiency may not hinder nor evade the functionality of the child. In a recent film shown in August of 2007 entitled ALYANA –A STUDY OF AUTISM IN THE PHILIPPINES, it showed in the said documentation it shows the plight and the struggle of persons with autism, their families, and those involved in their lives, especially focusing on the experiences of Mothers in handling and coping up with the situation of having an autistic child.

As to the mode of approach of treatment of the patients with autism, an Occupational therapist still depends on the traditional approach. In addition, thereto most patients whom are handled by Occupational therapist are either in the Hospital, Clinics or even home service. Thus, they just incorporate certain modalities that are also used by other countries. However, the approach of using the computer in assisting the treatment has been far off stagnant as compared to other countries that had tried to incorporate in their

treatment had become successful. Thus, there is still lack of aid and knowledge if we will just depend on Philippine setting.

RELATED STUDIES:

Several Studies had actually been made with regard to treatment of autism and approaches that would seem beneficial in aiding the Occupational therapy profession in treatment of Autism. Assistive Technology had been viewed as an early intervention as to play an important role in treatment of most children especially in the early stages of Autism. As have been previously mentioned autism is a lifelong neurodevelopmental disorder. Early intervention has been prioritized because of evidence that it can make a significant difference to the individual's development (Butter et al., 2003). While even aggressive and early intervention is unlikely to change the diagnosis (Howlin, 2003), it can affect the individual's eventual success across all core life domains (Butter et al., 2003). The introduction of computer as a tool such as Cosmo's learning system has the potential to make great improvements in a child's quality of life, mobility, responsiveness to its environment and in the therapists' ability to monitor and reward progress. Results from previous studies encourage us to investigate Assistive technology further as a very promising learning tool that engages students in longer learning intervals.

Being a college student is more than just academic achievements, it entails experiences, responsibilities, and opportunities that contribute to an impact life beyond academic life. A is a form of assistance that is granted to students based on their other accomplishments. It helps support education by covering expenses such as tuition fees, textbooks, accommodation, and more. The criteria for selection and the utilization of funds are determined by the organization or individual providing the. (University of South Alabama 2023). In the Philippines, Republic Act No. 10687 also known as the "Unified Student Financial Assistance System for Tertiary Education (UniFAST) Act" is a declared policy that aids students who wish to avail in both private and public institutions. Financial Assistance in this act is given through student loans, government programs, Grants-in-Aid, and. House Bill No. 6631, also known as the "Nursing and Return Service Program Act," is a current 28 house bill in the Philippines that focuses specifically on nurses. It

offers to deserving students attending state universities and colleges or private higher education institutions in an effort to close the widening gap between the number of local nurses and hospital beds. As a condition of receiving the aforementioned, students must pass the board test within a year after finishing their degree. After that, the student would spend 1.5 years in their appropriate local government unit (LGU) for each academic year that they were awarded a. Additionally, according to a recent announcement from DepEd, the Kennedy-Lugar Youth Exchange and YES Program is now available to prospective Filipino students searching for. The purpose of these exchange is to foster relationships between Filipinos and US and/or international people (Hernando-Malipot 2022). “Iskolar ni Juan”, Gokongwei Brothers Foundation, and Universal Robina Corporation provide opportunities for those wishing to finish a technical-vocational (tech-voc) education if they choose to remain in the Philippines and have a guaranteed job opportunity. Becoming a goes beyond receiving a diploma at the end of your journey. It opens up opportunities for growth and development beyond what's expected. Networking emerges as an avenue in this regard. In today's context networking is essential; establishing connections with a range of individuals fosters relationships that can be beneficial in the future. Great staff members are good at talking and working together. They also know their strengths and weaknesses, are humble and honest, believe in themselves, and are hard-working . (Prokopets, 29 2024). An individual's achievements may be influenced by different factors, like their education and the environment they grew up in. However, the significant factor that contributes to a person's success is the support they receive from their family. Families play a role in providing an environment where individuals gain knowledge and receive both economic and emotional help (Bohorquez, 2021). Academic Performance of Students with Academic performance is subjective data that can be obtained through a student's general weighted average (GWA) or their performance across a range of academic areas. A college student with a academic performance can be influenced by various factors but mainly is affected by the need to retain the by maintaining a specific academic outcome. Universities and/or researchers frequently utilize formative and summative examinations to measure this data. A student's academic success can be determined by various factors, including cognitive abilities, motivation, study habits,

instructor quality, and socioeconomic considerations. However, academic bias is pervasive and can manifest through professors, tests, school, and gender, thereby should also be taken into consideration. Research published by McKenzie (2019) focused on the impact of poverty on academic achievement, revealed that children raised in higher-income households are less likely to experience stress, whereas those who live in poverty increase the chance to struggle with mental health issues, emotional and social 30 difficulties, and cognitive impairment related to memory and emotion. A study conducted by Moreira, et al. (2019) analyzed that the students who receive during medical school are mostly the same students who have performed better academically and receive academic, thus concluding that low household income does not equate to academic disadvantages. A study conducted by Castillo et. al. (2020) provides evidence that the NSF-funded S-STEM program has a positive impact on the academic and career development of undergraduate students. The study found that recipients had higher GPAs, were more likely to graduate with a STEM degree, and were more likely to pursue STEM careers after graduation. Additionally, the study Overall, the NSF-funded S-STEM program became a valuable resource for undergraduate students who are interested in pursuing a STEM degree in the United States. The program also provides financial assistance, academic support, and networking opportunities that can help students succeed in their STEM education and careers with a more positive outlook. A study by Habiba et al. (2022) revealed that the majority of students from Pakistan concurred that improve the conscientiousness, goal-setting, and public speaking abilities of the students. Other abilities of student that were seen as being improved by include consistency of study, learning skills, confidence, dedication to study, dependability, and the creation of a competitive educational environment. However, fewer students agreed that improve improvisational, cognitive, economic adjustment, or social 31 abilities. The study concluded that give students confidence and inspiration and serve as an important means of rewarding their accomplishments. Overall, impressive academic performance has a positive impact in the long run and is considered a key predictor of future academic success. It is associated with better employment outcomes and ear high salaries for it reflects on their credentials and can manifest in personal development and self-esteem.

and Financial Stability Lately, the researchers noticed an uptick in the cost of living in the Philippines. Prices for goods and services are skyrocketing – whether it is food, electricity, medical care, or other essentials. People in the Philippines are now actively comparing supermarket prices with those. For example, the cost of a single-bedroom apartment in Manila's are is 47% higher than Jakarta, 56% higher than in Kuala Lumpur, 31% higher than in Ho Chi Minh City, and 9% higher than in Bangkok. At P50,800 Manila stands as the city for living costs. This study takes into consideration the rent, food, transportation, utilities, and more. Even if the researchers exclude rent from the equation the overall cost of living in Manila still hovers around P28,800, per month (Chanco, 2022). As of October 2022, the DOH Statistic indicates that while 240, 000 nurses are provided to the Organization for Economic Cooperation and Development, there is a shortfall of 106,000 nurses in the Philippines' private and public hospitals. Reyes (2022) states that every year, hundreds of nurses prefer to serve overseas, having a significant impact on the 32-healthcare sector as a whole. Health Secretary Ted Herbosa stated that the Philippines has to compensate Filipino nurses more fairly to prevent them from having to work overseas because they are underpaid while being overworked, which is the primary reason they want to work abroad. According to Habiba and Liaqat (2022), Financial resources have an impact on the field of education. Students who have the advantage of being financially stable can access high-quality education at respected institutions. However, students from low-income families often face countless obstacles when it comes to pursuing their education and attending higher education establishments. As studied by Barrow and Rouse (2018) Professors have been expressing worries about the low academic performance of students in the United States. are financial grants offered to students in order to assist with their academic pursuits. Although it isn't awarded to anyone, it is determined by a number of factors, such as academic success, leadership abilities, athletic ability, and unique skills that could be valuable to the student as well as the institution. Lately, there has been a lot of attention given to addressing another factor. The commitment and hard work that students put into their studies. When it comes to education students invest their effort in two ways; by attending classes and participating in study sessions. They can improve their dedication in these aspects by increasing their

attendance, spending time on studying or finding ways to make their study sessions and classroom participation more effective. 33 In any institution offering incentives is important, for boosting and sustaining motivation, which ultimately leads to optimal performance. Numerous studies have extensively. Recorded the influence of rewards, on the motivation levels of different types of students (Shibly & Weerasinghe, 2019). Achievements in higher education have generally been limited which leads us to question why this is the case. Can monetary incentives genuinely shape investments in a way that effectively influences student behavior? Alternatively, are these small, yet positive results simply anomalies in the data potentially linked to the provision of income rather than the incentive system itself? Do they indicate changes in aspects, such as students opting for less challenging courses? At the college level financial incentives have shown effects on grades in four-year colleges although certain subgroups may experience larger impacts. On the other hand, that are based on performance enhance the value of putting effort into schoolwork during the semester by increasing the immediate rewards. For instance, receiving payments may depend on achieving performance targets like maintaining a GWA. Festa et al. (2019) stated that recognizing the consequences of debt, on their graduates' futures many colleges now offer financial guidance and additional support to students. The aim is to improve student retention rates and ease the burden that comes with student loans. Considering the rising costs associated with education, administrators, and educators at institutions must take into account the factors that influence students' decisions regarding how they finance their 34 education. These choices have an impact on student retention well-being and future financial plans. As a result, this issue should be prioritized by counselors, educators, financial aid officers, and other professionals in the field. Additionally, the amount of student loan debt will also affect students' ability to afford goods or services later in their careers. This underscores the importance for policymakers to consider these factors when shaping policies. Changes in the application process for aid similarly impact both school and college students. Stressors and Coping Mechanisms of College Grantees A student's college years are a time for personal growth and development wherein students can apply healthy coping mechanisms that will later on foster effective habits that will eliminate stressors carried out in their everyday lives.

Effective coping mechanisms can help maintain mental and emotional resilience that will impact overall academic achievement and self-reliance. The coping mechanisms of these students surely vary on the severity of the stressors, and how they affect them, which ultimately becomes crucial for these students. Stress can be experienced by college student grantees and or academic in a variety of forms. Personal stress, academic stress caused by the obligation to uphold academic standards, financial stress due to a restricted budget, and stress associated with the responsibilities of an academic are all examples of stressors. Each student who is struggling with stress has 35 a unique approach to managing it, where they may not know if their methods are effective or not. Everyone can attest that college is difficult. College grantees face a lot of stressors that can significantly impact students' academics and various aspects of their lives; this is why their coping mechanisms are important. A lot of students are faced with different challenges and struggles in their college journey which most definitely take a toll on their physical, mental, and emotional health. College grantees have often established a support system, often seeking guidance from peers, mentors, and/or counselors who are also emotionally intelligent. Students face a lot of obstacles in their daily lives that is why they introduced the idea of a lively university life that is revealed by these challenges which adds to stress (Pariat et al., 2014). A lot of students face adversity and difficulties in not only their studies but also in their future work life. Also, for some students, not a day goes by that they are not able to experience stress. Being faced with hardships can impact a student's academic journey and can also become challenging as some students have a difficult time coping with it. Students in higher education institutions were suddenly faced with the challenge of adapting to unfamiliar learning environments (Farnell et al., 2021). Possessing a strong support system offers emotional and psychological advantages, varying from reduced blood pressure to enhanced and improved selfesteem. These support systems aid the students in managing mental distress and 36 enhancing their resilience in challenging situations. A study conducted by McAlpine et al. (2018) revealed that post-graduation medical students strive to be independent and, hence, require less guidance, which often results in feelings of isolation. Nowell et al. (2020) analyzed that constellation mentorship models offer a means of facilitating cross-disciplinary discussions among colleagues who

share common interests. Nowell et al. (2021) supported their earlier study by discovering the importance of mentoring as a talent for senior students to acquire. This is because mentoring enhances their skills in listening, feedback-giving and receiving, perceptive response, and interpersonal relationship-building. Moreover, reliable support or social networks positively influence overall health, contributing to longevity and a stronger immune system among individuals with close friendships (Gustafson et al., 2020). During stressful situations, an individual may use coping as a stabilizing factor that may support them in psychosocial adaptation (Bamuhair et al., 2015). If students use the right coping mechanism that works for them, it will effectively reduce their stress levels and will alleviate stressors in their lives, maybe not entirely but to a manageable level. According to Dirk Janssen (2013), maladaptive coping refers to coping mechanisms that are related to poor mental health outcomes. These coping coping mechanisms would include avoidance, emotional suppression, and disengagement (Compas, 2017). suffer problems facing pressures on what and how they can maintain their grades or improve their grades in order to maintain their. 37 (Guimba, et. al., 2015). Academic stress has always been a topic of interest, particularly among college students. There may be different sources of stress, some of these may be academic pressure, and financial concern – which is now common as college tuition fees are expensive especially when not granted a 100%, social isolation, and peer and family expectations which can also include expectations from self from the pressure of maintaining their, and lastly competition — being granted an academic is not easy as it may be limited to a number of students only. The nursing student participants exhibited the resilient Filipino character that demonstrates the ability of Filipinos to find happiness even under difficult circumstances (Berdida, 2022). Problems Encountered by the Students Lofton (2020) indicated that medicine is widely recognized as a field, known for its rigorous coursework and time-consuming nature. According to Maffea (2020) delayed information affects the students in different ways such as them not getting the most out of the necessary information. They are able to read parts of it but they are not getting the timely full picture they need. Despite its reputation for being challenging both students and faculty members take pride in overcoming the obstacles it presents. Instructors often notice difficulties among students in areas such as preparation,

managing time effectively, maintaining work-life balance, and adopting successful strategies for taking tests. Supported by the study of Nayak (2019) that students in a certain program require to have a time-management skill 38 to be able to oblige in their requirements. These courses require students to integrate and apply the knowledge acquired from prerequisite classes with their grades reflecting how well they can put this information into practice. Chan (2014) encourages problem-based learning wherein the professor has a more greater role. Clinical instruction plays a role in medical education as it helps students bridge the gap between knowledge and practical patient care. The ideal scenario is for students to become competent in medical practice while being supported by clinical partnerships. However clinical teaching faces obstacles especially when it comes to the challenges that students encounter in the setting. To enhance their clinical practice experiences, it is important for students to learn in environments that offer resources for active learning. Despite efforts to create environments nursing students still face difficulties that negatively impact their clinical practice experiences (Al-Dweik et al., 2021). According to Gause et al. (2022), tools of technology and devices that are portable digital assistants had an impact on the world of nursing education especially when it comes to technology-enhanced learning. These handy devices and applications are now essential for teaching and learning practices. In nursing education, technology plays a role in both classroom settings helping to enhance the learning experience. However, there is still some variation in how accepted these technologies are, within the nursing education community. 39 Students in studies conducted by Mackay et al. (2017) and MárquezHernández et al. (2020) reported that technology and personal digital assistants (PDAs) provided them with access to a wide range of websites, enabling them to have timely and informed clinical decisions during work-integrated learning placements in clinical settings. Additionally, the integration of technology into clinical practice has been shown to drive innovation in sound clinical decision-making (DiMattio & Hudacek 2020). In spite of the clear benefits that we get from technology that we use for both learning and teaching within nursing education, and with this rapidly growing teaching and learning modality, there are still challenges. Exploring Levels of Student Satisfaction According to Simming et al. (2015), there is a growing demand to comprehend the elements that

influence students' satisfaction with their learning experiences. Engaging in studies is an essential endeavor for individuals throughout much of their lives to sustain themselves and their families. However, the motivation and satisfaction of students differ. While some find motivation in a sense of achievement, others are driven by the desire to assist others or seek personal fulfillment. Satisfaction for some students is derived from personality development, adherence to values, and the fulfillment of psychological needs. The level of satisfaction among students regarding the quality of education services they receive serves as a critical indicator of the performance of different institutions in the contemporary world (Wong & Chapman, 2022). When 40 considering potential universities, an effective approach to gain insights into the institution is by inquiring with current students. Understanding their opinions on various aspects such as class sizes, course content, and their level of satisfaction with financial support can provide valuable perspectives (Bhardwa, 2020). In essence, when students talk about satisfaction, it's like a short-term vibe – it's about how much their educational expectations have been met or even exceeded. Since students have all sorts of expectations about their college experiences, many student see student satisfaction as this multi-faceted thing (Hanssen & Solvoll, 2015). Wach et al. (2016) assessed satisfaction by utilizing various elements. The first dimension focused on the content of learning, specifically gauging the joy and satisfaction experienced by students in their chosen preferred majors. The second dimension delved into the conditions of learning, examining students' contentment with the terms and conditions of the academic programs. Finally, the third dimension explored personal coping with learning, evaluating students' satisfaction with their own ability to manage academic stress. Correlation to Sex and Academic Performance Sex is assigned by a doctor at birth based on the genitals, it is a label – male and female. According to the Philippine statistics office 2020 census there are currently 109,035,343 in the total population. Sex is a factor assumed to have an impact on a student's academic performance. Numerous studies have shown 41 that females and males perform differently. A study conducted by Ullah and Ullah (2019) showed improvement in female academic performance. To get an overview, Morita (2016) asserted that academic achievement and performance are constantly higher among female students in Japan.

Urruticoechea et al. (2021) also revealed that male students who are younger than female students of the same relative age are more likely to have considerably lower test scores. A study by Janney (2017) revealed that coping mechanisms that are more problem focused are used more by men, while coping mechanisms that are emotion focused are used more by women. Women also seek out more social support than men. According to Ros et al. (2014), men were more repressive than women, this analysis, which supports the study of Janney suggests that women's ability to utilize emotion to solve problems may be beneficial. During the COVID-19 pandemic, gender was a significant predictor of quality of life, with Filipino female nursing students having higher results than men (Guillasper et al., 2021). However, this has been an ongoing debate. Regardless of the evidence, some studies beg to differ. According to Ajai and Imoko (2015), their study concluded that male and female students do not have a significant difference in achievement and academic performance. Goni (2015), conducted a study that shows no significant difference when it comes to sex for college students' academic performance. 42 Age Appropriate for Studying PSA (2020) released the number of 18 years and above Filipinos of both sex having a total of 68,945,888. And tThe expected number of youth in the Philippines, defined as those between the ages of 15 and 24, is 20.15 million, according to the Philippine Statistics Authority (2023). With a Net Enrollment Rate in the Academic Year 2021–2022 of 82.7 for men and 90.3 for women (EBEIS 2023). Although, according to Bonnie et. Al (2015) young adults' life expectancy decreased due to their unhealthy lifestyle. Older students in classes are believed to perform better than their younger peers in terms of academic performance. Students who are delayed in their enrolment scored significantly higher on the cognitive, motor, and socio-emotional performance than students who are enrolled to their corresponding age (Urruticoechea et al., (2021). It was also revealed that less socially engaged individuals are more likely to be committed to their studies. Early admission students performed better than older students, according to research by Pellizzari (2014); this was linked to the youngest students having lower levels of social interaction due to lower socio-emotional adjustment and lower self-esteem. But on the contrary, students in a class who are somewhat older tend to be less motivated than those who are substantially younger (Urruticoechea et al.,

2021). Year levels are believed to be correlated to a student's fulfillment in life. The results in the research of Berdida (2022) indicated that year level is a major predictor reinforced by the fact that 3rd year students have the highest levels of 43 life satisfaction and 1st year students have the lowest levels of life satisfaction. The degree of stressors that nursing students have experienced over time complements their year level in the curriculum, thus having better resiliency.

Synthesis

The area of medicine is changing quickly due to advancements in technology and especially in computer assisted instruction (CAIs). New developments in CAIs have greatly enhanced treatment methods by making them more interesting and efficient for children receiving care. One major improvement is the growing utilization of point of care ultrasound technology that offers real time imaging and diagnosis without radiation exposure; this upgrade has improved the precision of assessments and procedural assistance, in healthcare significantly.

The integration of health records (EHRs) has changed the way healthcare processes work by enhancing the organization and availability of data which helps in making better decisions and creating customized treatment strategies for patients as well. Training through simulations has become vital for the enhancement of skills, in healthcare practitioners as it provides a setting to hone their abilities and increase their expertise across various medical areas including pediatric care and life saving techniques. AI text has been improved significantly by AI tools that're now able to provide personalized learning experiences suitable for each childs requirements through interactive and adaptive methods known as Computer Assisted Instruction CAIs.

Computer Assisted Instruction is being further enhanced with the integration of Virtual Reality and Augmented Reality offering an engaging and immersive environment that is particularly beneficial for therapeutic purposes and skill development. Moreover, the incorporation of gamification elements in Computer Assisted Instruction such, as rewards and challenges enhance engagement and motivation resulting in improved treatment

compliance and outcomes. That point mentioned earlier about how mobile devices and wearable gadgetsre being used more widely nowadays in pediatric healthcare to provide better access to CAIs with real time feedback and flexibility for a more comprehensive approach to childrens health care needs—there's a push to make sure these tools are available and user friendly for all kids including those, with disabilities and special educational requirements.

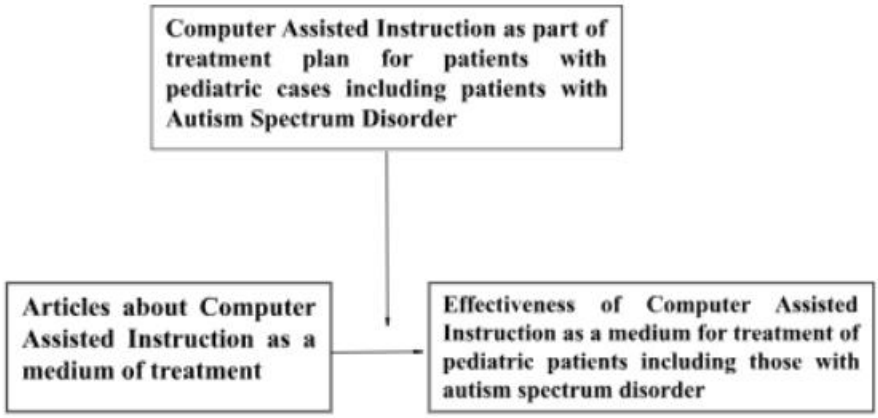
Advancements in computer assisted intelligence technology are transforming healthcare by improving its effectiveness and personalization while also increasing interactivity – potentially leading to better results for children and their families alike in the long run as technology progresses and CAI becomes more integral, to the healthcare landscape.

Caring for children with Spinal Muscular Atrophy (SMA) can be tough for parents and caregivers as the condition worsens over time. They deal with a mix of practical hurdles like handling the day-to-day care needs along, with the emotional strain and financial pressures involved in caregiving responsibilities that can bring about stress and unfulfilled requirements. They often find it challenging to navigate through the healthcare system while also juggling treatment schedules and communicating with medical staff which only adds to their load.

Witnessing a child’s health deteriorate over time can bring about feelings of worry and sadness for those looking after them. The financial burden of buying equipment and modifying the home can also add pressure on family finances. To tackle these issues effectively it's important to consider the needs of caregivers when planning care, for children with SMA. This way the care plans can offer assistance that boosts the emotional strength and perseverance of caregivers.

Caregiver support services should offer health resources for caregivers as well as support groups and programs for respite care and financial assistance to help alleviate stress and enhance mental well-being so caregivers can provide optimal care for their children effectively. They should focus on preventing and addressing health challenges such, as burnout and fatigue to ensure the overall well-being and effectiveness of caregivers.

In the studies need to delve into comprehending the particular signs and pressures highlighted by caregivers and how these affect their overall well-being significantly. This awareness might lead to designing customized assistance programs that cater to the requirements of each household. Furthermore, research should investigate how coordinated care strategies can effectively include caregiver assistance pinpointing areas for enhancement to improve results, for both caregivers and their kids. Taking care of the social needs of caregivers while offering a range of support services can help lessen stress and enhance the well being of families as a whole. When caregivers receive support and resources that empower them effectively in caring for children with SMA it results in positive outcomes, for the entire family dynamic.



(Figure 1) Conceptual Framework regarding the application of Computer Assisted instruction as a part of the treatment plan for patients with various pediatric cases including those with Autism Spectrum Disorder, in selected clinics and hospitals in Manila.

The researcher primarily gathered articles and studies from different sources through the internet, books in some libraries and special references given by Sir Armel Rebong regarding the use of Computer Assisted Instruction as a means of intervention in treating pediatric patients including those with autism spectrum disorder. A survey would also be conducted in order to gather important data in relation to the use of such modes of treatment by most licensed Occupational Therapy who had been handling pediatric cases in some clinics and hospitals here in Metro Manila as to its effectiveness in treating the

patients. The design of the survey would be a descriptive and close ended survey that would help extract further data for the researcher to be able to prove the advantages and 9999disadvantages of computer assisted instruction as a medium of learning for that Occupational therapist that had been exposed to using it in their practice.

Chapter III

METHODOLOGY AND PROCEDURES OF RESEARCH

RESEARCH DESIGN:

This research endeavor will adopt a multi-pronged data collection strategy, seamlessly integrating a comprehensive literature review with a meticulously designed survey instrument, to achieve a holistic and nuanced understanding of the research objectives.

The initial phase will be dedicated to a systematic and exhaustive exploration of the existing body of knowledge pertaining to the efficacy and implementation of Computer-Assisted Instruction (CAI) in the context of occupational therapy for children with Autism Spectrum Disorder (ASD). This will involve a rigorous and critical review of scholarly publications, peer-reviewed articles, clinical trial data, and relevant grey literature accessible through reputable online databases and the esteemed collections of select libraries within Metro Manila. This comprehensive literature review will not only serve to establish a robust theoretical and empirical foundation for the research but also identify existing knowledge gaps and areas ripe for further exploration.

Building upon the insights gleaned from the literature review, a meticulously crafted survey instrument will be developed. This instrument will adhere to established best practices in survey design, ensuring validity, reliability, and cultural sensitivity. It will employ a judicious blend of structured, closed-ended questions amenable to quantitative analysis, alongside open-ended questions that facilitate the capture of rich qualitative data and nuanced perspectives.

The target population for the survey will encompass key stakeholder’s integral to the research objectives, including but not limited to occupational therapists actively engaged in the treatment of children with ASD, parents or primary caregivers of such children, and potentially other pertinent healthcare professionals involved in their care. A purposive sampling strategy will be employed to ensure the inclusion of participants with diverse experiences, backgrounds, and perspectives, thereby maximizing the representativeness and generalizability of the findings to the broader population of interest.

Survey administration will be conducted through a combination of online platforms and in-person interviews, ensuring accessibility and accommodating the preferences of diverse participants. Stringent data privacy and ethical considerations will be scrupulously upheld throughout the entire data collection process, safeguarding the confidentiality and anonymity of all participants.

The quantitative data emanating from the survey will undergo rigorous statistical analysis, employing a suite of appropriate descriptive and inferential techniques to discern patterns, trends, and correlations. The qualitative data, on the other hand, will be subjected to thematic analysis, a meticulous process of coding, categorizing, and interpreting textual data to extract meaningful insights and identify emergent themes.

The study was conducted through data gathering from all available data that may be sourced out from the internet and selected books in a number of libraries in Metro Manila.

As many researchers, know, surveys are usually used as a tool for data collection and measurement processes. There are different types of surveys available and to name some of the most common are marketing surveys, opinion surveys, and political polls.

The surveys conducted for research purposes have three (3) distinct characteristics. One of the general characteristics of surveys is its purpose of producing quantitative descriptions of some aspects of the study population. Survey analysis may be primarily concerned either with relationships between variables, or with projecting findings descriptively to a predefined population.

Thus, it may be considered that survey research is a quantitative method, requiring standardized information from and/or about the subjects being studied. The subjects studied might be individuals, groups, organizations or communities; they also might be

projects, applications, or systems.

Another characteristic is its methodology of asking people structured and predefined questions in order to collect the required information. Their answers, which might refer to themselves or some other unit of analysis, constitute the data to be analyzed.

Lastly, in surveys the information generally collected is only about a fraction of the study population--a sample but it is collected in such a way as to be able to generalize the findings to the population like service or manufacturing organizations, line or staff work groups, or various users of information systems such as managers, professional workers, and clerical workers. Usually, the sample is large enough to allow extensive statistical analyses.

Hence, the researchers deem fit to use surveys and/or questionnaires in the conduct of this study with the primary intention of unveiling the experiences of a sample number of licensed or registered Filipino Occupational Therapists here in Metro Manila in its application of CAI as an assistive learning material and medical aid to Filipinos, especially children ages thirteen (13) below, with pediatric cases, particularly Autistic **Spectrum Disorder.**

This hybrid methodological approach, seamlessly integrating both the breadth of a comprehensive literature review and the depth of a targeted survey investigation, will empower the research to generate a holistic and nuanced understanding of the research topic, culminating in the production of robust, evidence-based findings that have the potential to inform practice, policy, and future research endeavors in the field of occupational therapy for children with ASD.

This sample of individuals is usually just a fraction of the population being studied. Generally, information gathered from surveys is only from a portion of a population of interest. The sample selected is not selected haphazardly or only from persons who volunteer or participate. It is scientifically chosen so that each person in the population would have a measurable chance of selection. This way the results can be variably projected from the sample to the larger population (Fritz Scheuren, June 2004).

The researcher in this study uses Paper and Pencil Interview or PAPI as a form of Survey wherein the researcher would present a set of predefined and structure questions which would be answered by a selected unbiased and licensed Filipino Occupational Therapists whom would be selected by the researcher to participate in the study being undertaken

by probing for facts on whether the foreign articles and theories regarding application of CAI to treatment of Filipino children patients encountering special pediatric cases, especially those with autism, be applicable in the Philippine setting. The study also would like to determine whether the application of CAI is considered to be beneficial to licensed Filipino Occupational Therapists for it lessens their burden and show the advantages and developments of using CAI in the treatment of the patient.

SITE OF THE STUDY:

The research was carried out in establishments such as institutions and healthcare facilities in Metro Manila that provide Occupational Therapy OT services to represent a wide range of places where OT is utilized in practice settings. The chosen sites differed significantly in their areas of expertise population served. Available resources, resultantly offering a varied perspective on occupational therapy practices in the area. This intentional selection was made to guarantee that the study encompassed an array of OT services ranging from specialized care for children to general rehabilitation, for different health conditions.

The Philippine Orthopedic Center stands out as a known public hospital specializing in the treatment of musculoskeletal issues and injuries. Within this institution is a rehabilitation unit where occupational therapists collaborate closely with individuals recuperating from orthopedic surgeries traumatic injuries and congenital musculoskeletal disorders. Their responsibilities often revolve around developing personalized rehabilitation plans comprising exercises living training sessions and adaptive strategies aimed at aiding patients in reclaiming their autonomy and mobility.

The Philippine Children's Medical Center is a location in the research and places emphasis on caring for children by providing specific occupational therapy services that are designed to meet the individual requirements of young patients in need of specialized care services and interventions to improve their skills and capabilities for a range of conditions such as delays in development or issues related to the nervous system or sensory processing challenges are addressed through various approaches aimed at

supporting the growth and functional abilities of children, under multidisciplinary team settings where occupational therapists contribute significantly to creating holistic treatment plans that cater to both physical and cognitive aspects of child development.

Private medical facilities and unique therapy centers like Quality Life Discovery and Terapiya played a role in the research as well. These centers provide therapy sessions tailored to specific therapeutic methods or patient demographics like children, with autism or adults recuperating from strokes. Their offerings are adaptable. Centered around the needs of the patients often including cutting edge therapeutic methods and technologies to improve treatment results. The therapists in these facilities frequently employ a range of techniques such as integration therapy and cognitive rehabilitation along with training, on assistive technology to customize their interventions based on the unique requirements of their clients.

Our Lady of Lourdes Hospital and Theraneeds offer a variety of OT services for both outpatient care to highlight the comprehensive support that occupational therapy can offer to individuals in different healthcare settings. They serve a patient population ranging from those in need of extensive rehabilitation after acute injuries or surgeries to those seeking ongoing assistance, for managing chronic conditions. The professionals who work in these centers have expertise in meeting therapeutic requirements; they help individuals learn essential self-care abilities and assist patients in adjusting to life with a disability by making changes, to their surroundings and using supportive tools.

The addition of The Medical City. A private hospital recognized for its extensive rehabilitation services and state of the art medical advancements. Provided insight into the integration of occupational therapy within a sophisticated healthcare environment encompassing various disciplines. Occupational therapists at this facility frequently work together with medical experts to create and execute personalized rehabilitation plans that leverage modern equipment and methods. This setting fosters strategies in patient care such, as incorporating virtual reality for cognitive rehabilitation and utilizing robotics for physical therapy.

The Philippine General Hospital (PGH) which is among the most established public hospitals in the nation has also played a vital part in the research. With an varied patient base that includes many individuals from lower income backgrounds, the occupational therapy services offered at PGH are crucial in meeting the requirements of patients who might lack access, to private healthcare facilities. The counselors at PGH frequently need to be creative and flexible, in their approach while dealing with an environment and scarce resources that push them to come up with new ideas to deliver quality care effectively.

The study not included field research at different locations but also encompassed a thorough examination of academic writings from articles and publications sourced online and from libraries in various private and public schools in Metro Manila. These academic materials served as the foundation, for the study and helped the researchers place their findings in the context of occupational therapy wider scope. The review of literature encompassed subjects such as proven practices supported by evidence-based research studies as well as the latest developments in occupational therapy and the incorporation of innovative technologies and approaches, in therapeutic treatments.

The research methodology of the study integrated real world investigations with an examination of existing literature to establish a strong foundation that encompassed both the practical aspects and theoretical progressions in occupational therapy fieldwork. This two-pronged methodology enabled the study to investigate the interconnected relationship between hands on applications and research endeavors offering a comprehensive perspective on the evolution of occupational therapy, in adapting to emerging challenges and possibilities.

The study looked into a variety of institutions. Utilized a wide range of academic sources to provide a thorough and detailed overview of occupational therapy in Metro Manila. It focused on showcasing the features and impacts of each institution involved while also shedding light on the shared obstacles and advancements that shape the field. This holistic method not highlighted the flexibility and ingenuity of occupational therapists in diverse contexts but also stressed the significance of ongoing research and improvement to enhance the standards and efficiency of OT services, in various healthcare settings.

SAMPLE SELECTION:

The subjects of the study consist of thirty (30) licensed Filipino Occupational Therapists from different institutions, hospitals and centers that provide Occupational Therapy Services. The subjects a selected using convenience sampling method. The subjects were selected based on the following criteria:

Licensed Occupational Therapists, regardless of age, gender and civil status;

Have clinical experience of have been practicing their profession for at least one (1) year in a recognized institution, hospital or center in Metro Manila, whether private or public, offering Occupational therapy interventions in any area or field; and;

Must have dealt with patients having special pediatric cases, particularly those with Autistic Spectrum Disorder.

The selected group of professional licensed Occupational Therapist that are attending and treating patients that had been diagnosed with special pediatric cases were provided with a PAPI survey. The patients or clients of these Occupational Therapists should be able to meet the following criteria:

Client/ Patient of the Occupational Therapist:

- Must have been diagnosed by a doctor with any pediatric disorder, particularly autism; and;
- Must have undergone treatment for not less than six (6) months;

Outcome measure:

- Quantitative and Qualitative Survey Questionnaire Statistics
- Comparative Data graph Analysis

The following Occupational Therapists are however excluded from the study, namely:

- Those whom had failed to encounter patients experiencing special pediatric cases, particularly autism;
- Those who are not yet considered as licensed Filipino Occupational Therapists;
- Those licensed Filipino Occupational Therapists who have not gained clinical experience of more than one year and/or are not practicing in any institution, hospital and/or center offering;
- Occupational Therapy interventions here in Metro Manila;
- Those licensed Occupational Therapist but are not considered as Filipino citizens; and;
- Those whom are already venturing as to the effects of computer due to awareness of CAI.

DATA COLLECTION AND INSTRUMENTATON:

The foundation of this research endeavor lies in the meticulous and ethically sound collection of data, with a particular emphasis on garnering the invaluable insights of licensed Filipino Occupational Therapists who are actively engaged in the treatment of children with autism spectrum disorder (ASD). This participant-centric approach recognizes the pivotal role these therapists play in shaping the therapeutic landscape and their unique perspectives on the potential and challenges associated with integrating Computer-Assisted Instruction (CAI) into their practice.

To initiate the data collection process, formal letters of invitation were meticulously crafted and extended to potential participants, outlining the research objectives in a clear and concise manner while also underscoring the paramount importance of participant confidentiality. Concurrently, letters seeking institutional approval and support were directed to the respective institutions where these therapists are affiliated.

Upon receiving positive responses from potential participants, a comprehensive informed consent process was initiated. This process entailed providing each participant with a detailed document elucidating the nature and scope of the study, their rights as participants, and the stringent measures implemented to ensure data privacy and

anonymity. This transparent and ethically sound approach served to foster trust and empower participants to make informed decisions about their involvement in the research.

Central to the data collection process was the administration of a meticulously designed survey questionnaire. This instrument, comprising fourteen (14) closed-ended questions, was purposefully constructed to elicit specific and quantifiable data regarding the utilization patterns, perceived benefits, and potential challenges associated with the integration of CAI within the occupational therapy treatment plans for children with ASD.

Recognizing the diverse schedules and commitments of occupational therapists, a flexible approach was adopted for questionnaire retrieval. Participants were given the option to return the completed questionnaire either after one week or at a mutually convenient time, thereby maximizing participation rates and minimizing any potential burden on respondents.

Upon retrieval, all completed questionnaires underwent a rigorous and comprehensive evaluation to ensure the accuracy, completeness, and integrity of the collected data. This meticulous data cleaning process paved the way for a sophisticated mixed-methods analysis, wherein both quantitative and qualitative data were judiciously examined to extract meaningful insights.

Quantitative data were subjected to a battery of descriptive and inferential statistical techniques, enabling the identification of patterns, trends, and correlations within the data set. Qualitative data, on the other hand, were meticulously coded and categorized, facilitating a thematic analysis that uncovered nuanced perspectives and emergent themes.

The culmination of this rigorous data analysis phase will be the clear and compelling presentation of findings through a combination of visually engaging tables and graphs. This approach will facilitate the seamless interpretation and dissemination of research outcomes to a diverse audience, including fellow researchers, occupational therapists, policymakers, and other key stakeholders invested in advancing the field of occupational therapy for children with ASD.

By upholding the highest standards of methodological rigor and ethical conduct, this participant-centric data collection and instrumentation strategy will empower this research endeavor to provide a nuanced and comprehensive understanding of the current landscape and future potential of CAI within occupational therapy practice for children with ASD in the Philippines. The insights gleaned from this study have the potential to inform evidence-based practice, influence policy decisions, and stimulate future research endeavors, ultimately contributing to the enhanced well-being and quality of life for children with ASD and their families.

CONDUCT OF STUDY:

This research endeavor will be meticulously executed through a multi-phased approach, each stage meticulously designed to ensure the validity, reliability, and ethical soundness of the research findings.

Preparatory Phase: Laying the Groundwork for Rigorous Inquiry

The initial phase of the study will be dedicated to establishing a robust theoretical and empirical foundation. This will involve a thorough exploration of the existing body of knowledge pertaining to Computer-Assisted Instruction (CAI) and its applications within the realm of occupational therapy for children with Autism Spectrum Disorder (ASD). A systematic literature review will be conducted, encompassing scholarly publications, peer-reviewed articles, clinical trial data, and relevant grey literature. This comprehensive review, facilitated by reputable online databases and the resources of select libraries in Metro Manila, will serve to identify current knowledge gaps, highlight areas ripe for further exploration, and inform the development of the subsequent survey instrument.

Concurrent with the literature review, the research team will embark on the meticulous design of a survey instrument. This instrument will adhere to established best practices in survey design, ensuring validity, reliability, and cultural sensitivity. It will employ a judicious blend of structured, closed-ended questions amenable to quantitative analysis, alongside open-ended questions that facilitate the capture of rich qualitative data and nuanced

perspectives. Prior to data collection, all necessary ethical clearances and permissions will be secured to ensure the protection of participant rights and confidentiality.

Survey Design and Implementation: A Targeted Approach to Data Collection

The study will employ a Paper-and-Pencil Interview (PAPI) survey methodology. This approach is chosen not only for its feasibility in the given context but also for its potential to foster rapport and facilitate a deeper level of engagement with participants. A purposive sampling strategy will be meticulously employed to ensure the inclusion of a diverse and representative cohort of occupational therapists, parents/caregivers, and potentially other relevant healthcare professionals actively involved in the care of children with ASD in Metro Manila. Rigorous sample control measures will be implemented to ensure the accuracy and integrity of the collected data.

Data Collection, Analysis, and Synthesis: Unveiling Insights

Following the finalization and validation of the survey instrument, data collection will proceed through in-person interviews conducted with the selected sample. These interviews will be conducted in a sensitive and respectful manner, upholding the highest ethical standards. Once collected, the data will undergo a meticulous process of cleaning, coding, and preparation for analysis. Quantitative data will be subjected to rigorous statistical analysis, utilizing appropriate descriptive and inferential techniques to discern patterns, trends, and correlations. The qualitative data, on the other hand, will be analyzed through thematic analysis, a meticulous process of coding, categorizing, and interpreting textual data to extract meaningful insights and identify emergent themes.

The culmination of the data analysis phase will be the generation of a comprehensive draft report, synthesizing the findings and drawing evidence-based conclusions that directly address the research objectives. This report will then be refined and finalized, yielding a scholarly document that elucidates the role of CAI in occupational therapy for children with ASD within the specific context of the Philippines. It is anticipated that this report will disseminate valuable insights into CAI's potential benefits, implementation challenges, and recommendations for its optimal integration into standard occupational therapy

practice, thereby contributing to the advancement of knowledge and evidence-based practice in this crucial field.

By meticulously adhering to this comprehensive methodological framework, this research endeavor aspires to generate robust and impactful findings that will resonate within the occupational therapy community and beyond. The study's insights have the potential to inform practice, influence policy, and stimulate future research endeavors, ultimately contributing to the enhanced well-being and quality of life for children with ASD in the Philippines.

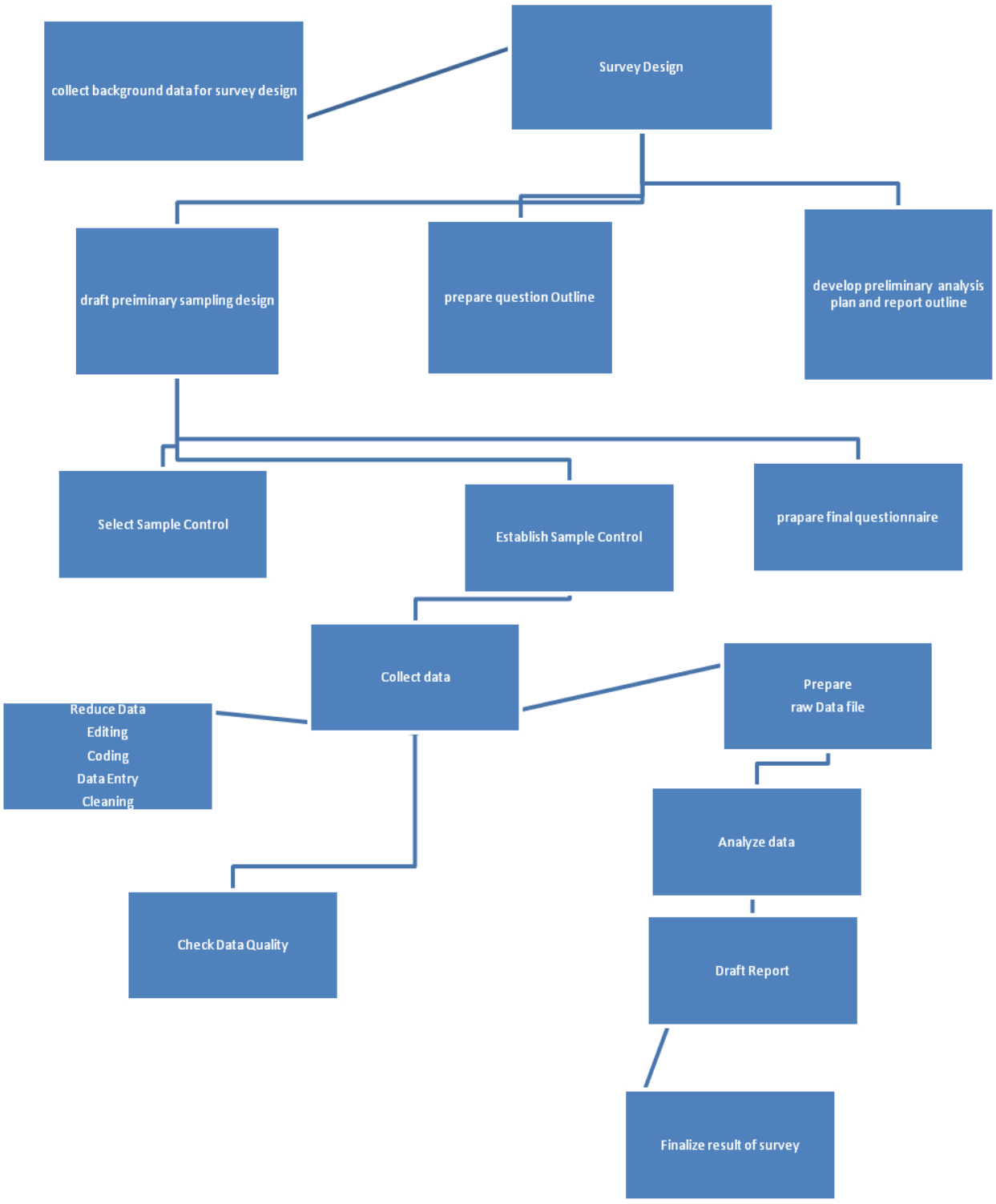


Figure 2. Research Flow

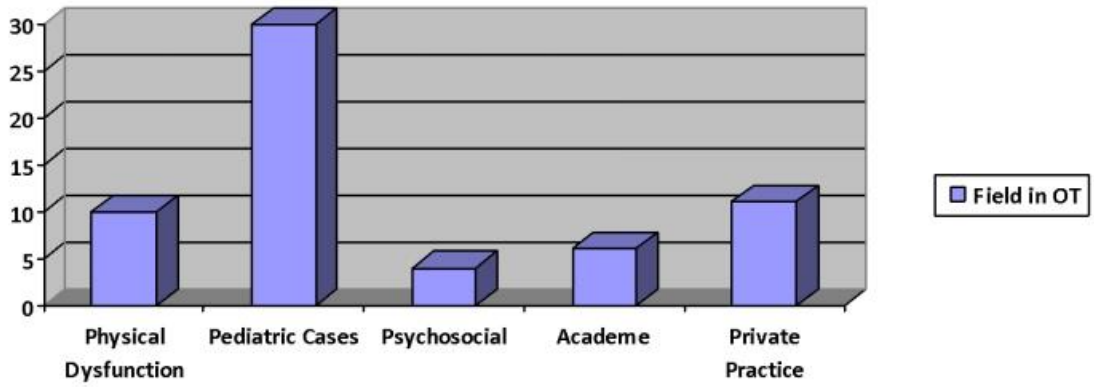
Chapter IV

DATA ANALYSIS AND INTERPRETATION

The survey questionnaire was given to the thirty (30) respondents and fortunately, the researcher was successful in getting their full cooperation of answering all the questions therein.

DATA REGARDING THE RESPONDENT OCCUPATIONAL THERAPISTS

Different Fields in which the Respondent Occupational Therapists are Engaged with:



The survey findings paint a vivid picture of the multifaceted professional landscape inhabited by the participating occupational therapists. The universal involvement in pediatric cases (100%) serves as a testament to the profound significance of pediatric occupational therapy within this sample. This overwhelming engagement suggests not only a robust demand for such services but also a deep-seated professional passion for working with children and facilitating their optimal development and participation in meaningful occupations.

Furthermore, the notable representation of practitioners engaged in psychosocial cases (13%) underscores the holistic approach embraced by many occupational therapists. This involvement signifies a recognition of the intricate interplay between physical and mental well-being, highlighting the profession's commitment to addressing the comprehensive

needs of individuals across the lifespan. By attending to the psychosocial dimensions of health, these therapists are equipped to facilitate not only functional independence but also emotional resilience and psychological well-being.

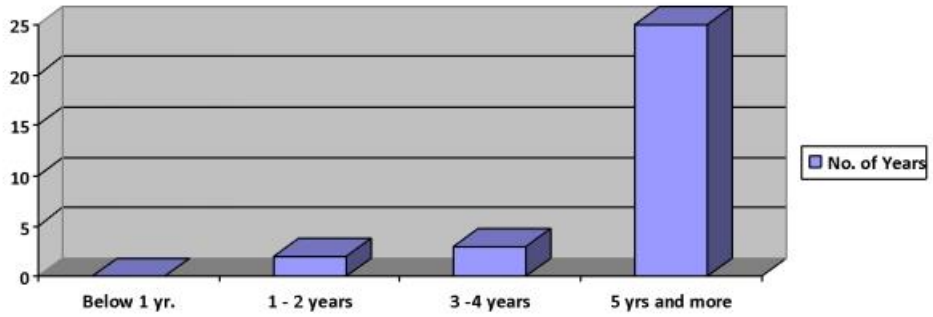
The substantial involvement in academic roles (20%) showcases a dedication to advancing the field of occupational therapy through knowledge generation, dissemination, and mentorship. These practitioners, engaged in teaching, research, or other scholarly pursuits, serve as vital contributors to the evolution and refinement of evidence-based practice, ensuring that the profession remains at the forefront of innovation and best practices.

Moreover, the considerable engagement in the realm of physical dysfunction (33%) reflects the profession's core commitment to optimizing physical function and facilitating meaningful participation in daily activities. These therapists, through their expertise in rehabilitation, adaptation, and assistive technology, play a crucial role in empowering individuals to overcome physical challenges and achieve their fullest potential.

Finally, the significant representation of occupational therapists engaged in private practice (37%) illuminates a growing trend towards entrepreneurship and individualized care within the profession. This model of practice fosters a greater degree of autonomy and flexibility for therapists, enabling them to tailor their services to the unique needs and preferences of their clients, thereby promoting a more personalized and empowering therapeutic experience.

In conclusion, the diverse practice areas represented among these occupational therapists underscore the versatility and adaptability inherent to the profession. This multi-faceted expertise, spanning physical, psychosocial, academic, and entrepreneurial domains, positions occupational therapists as invaluable contributors to the promotion of health, well-being, and optimal occupational performance across the lifespan. The dynamic interplay of these diverse practice areas creates a rich and vibrant professional landscape, reflecting the profession's capacity to evolve and adapt to the ever-changing needs of individuals and communities.

Number of Years the Respondent Occupational Therapists Handling Pediatric Cases:



The survey results provide a compelling glimpse into the professional landscape of the participating occupational therapists, revealing a unanimous dedication to the field of pediatric care. This unwavering commitment to working with children, evidenced by the 100% involvement in pediatric cases, underscores the pivotal role of occupational therapy in addressing the unique developmental, physical, cognitive, and psychosocial needs of this population. The data further elucidates the rich tapestry of experience within this group of therapists, ranging from seasoned veterans to those embarking on their initial forays into the world of pediatric practice.

A significant majority of the respondents, 83% (25 out of 30), have amassed over five years of experience in handling pediatric cases. This substantial tenure speaks volumes about their unwavering commitment to serving children and their families, reflecting a profound accumulation of knowledge, skills, and insights gained through years of dedicated practice. These seasoned professionals are likely to possess a deep-seated understanding of the intricacies of child development, the complex interplay of family dynamics, and the nuanced application of therapeutic interventions across a wide spectrum of pediatric conditions. Their wealth of experience positions them as invaluable mentors and leaders within the field, shaping the future of pediatric occupational therapy through their clinical expertise and unwavering dedication.

In contrast, a smaller yet significant contingent of therapists (10%, or 3 individuals) reported a moderate level of experience, spanning three to four years in the realm of pediatric practice. This group embodies the next generation of pediatric occupational therapists, actively refining their skills and expanding their knowledge base as they navigate the complexities and challenges inherent to this specialized field. Their presence underscores the dynamic and evolving nature of the profession, as new practitioners emerge to contribute fresh perspectives and innovative approaches to care.

Finally, a small but vital cohort of therapists (7%, or 2 individuals) indicated relatively recent involvement in pediatric cases, with one to two years of experience. These practitioners, while in the nascent stages of their pediatric journey, are nonetheless integral to the continued growth and vitality of the profession. Their enthusiasm, coupled with the guidance and support of their more experienced colleagues, will enable them to cultivate their skills, embrace lifelong learning, and ultimately blossom into competent and compassionate pediatric occupational therapists.

This diversity of experience levels within the sample speaks to the multifaceted and inclusive nature of the occupational therapy profession. It fosters a vibrant ecosystem where seasoned veterans and emerging practitioners collaborate, exchange knowledge, and collectively contribute to the advancement of the field. The presence of experienced mentors provides invaluable guidance and support to those embarking on their pediatric careers, ensuring the transmission of knowledge and the perpetuation of best practices. Simultaneously, the fresh perspectives and innovative ideas brought forth by newer practitioners serve to challenge established norms and stimulate ongoing professional growth and development.

The convergence of these diverse experiences creates a rich and dynamic tapestry within the field of pediatric occupational therapy. This tapestry, woven with threads of expertise, passion, and commitment, reflects the profession's unwavering dedication to empowering children with diverse needs to achieve their fullest potential and participate meaningfully in life's occupations. As the field continues to evolve and expand, this tapestry will undoubtedly become even more intricate and vibrant, reflecting the ever-growing

knowledge base and the unwavering commitment of occupational therapists to championing the well-being and participation of children across the globe.

Pediatric Cases the Respondent Occupational Therapists have Handled:

Among the different types of pediatric cases handled by the respondent Occupational Therapists, one hundred percent (100%) or all of them have handled the following:

1. Autism Spectrum Disorder;
2. Attention Deficit Hyperactivity Disorder;
3. Attention Deficit Disorder;
4. Cerebral Palsy;
5. Down's Syndrome
6. Mentally Retarded; and
7. Global Development Delay.

Eighty Percent (80%) or twenty-four (24) of the respondent Occupational Therapists have aided learning disability and sixty-seven percent (67%) or twenty (20) of them have handled Aspergers Syndrome. Finally, thirteen percent (13%) or four of the respondents have accommodated other types of pediatric cases, such as aspert's syndrome and seizure disorder.

The survey data reveals a striking prevalence of specific pediatric case types among the participating occupational therapists, underscoring the critical role of occupational therapy in addressing the unique needs of children with neurodevelopmental and learning challenges.

Universal Caseload:

A remarkable finding is the unanimous experience of all respondents in managing cases of Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), Attention Deficit Disorder (ADD), Cerebral Palsy, Down Syndrome, intellectual disability,

and Global Developmental Delay. This universal exposure highlights the widespread prevalence of these conditions among the pediatric population and emphasizes the essential role of occupational therapy in facilitating optimal development and participation in meaningful activities for these children.

Prominent Caseloads:

Furthermore, a significant majority (80%) of the therapists reported experience in addressing learning disabilities. This further emphasizes the vital role of occupational therapists in supporting children's academic success and fostering adaptive learning strategies. Additionally, two-thirds of the respondents (67%) indicated experience with Asperger's Syndrome, highlighting the profession's commitment to serving individuals across the autism spectrum and tailoring interventions to meet their specific needs.

Specialized Expertise:

A smaller but notable percentage (13%) of therapists noted experience with other, less prevalent pediatric conditions, such as Asperger's Syndrome and seizure disorders. This suggests that while these conditions may be less frequently encountered, a subset of occupational therapists possesses specialized expertise in addressing the unique challenges associated with these diagnoses.

Implications and Future Directions:

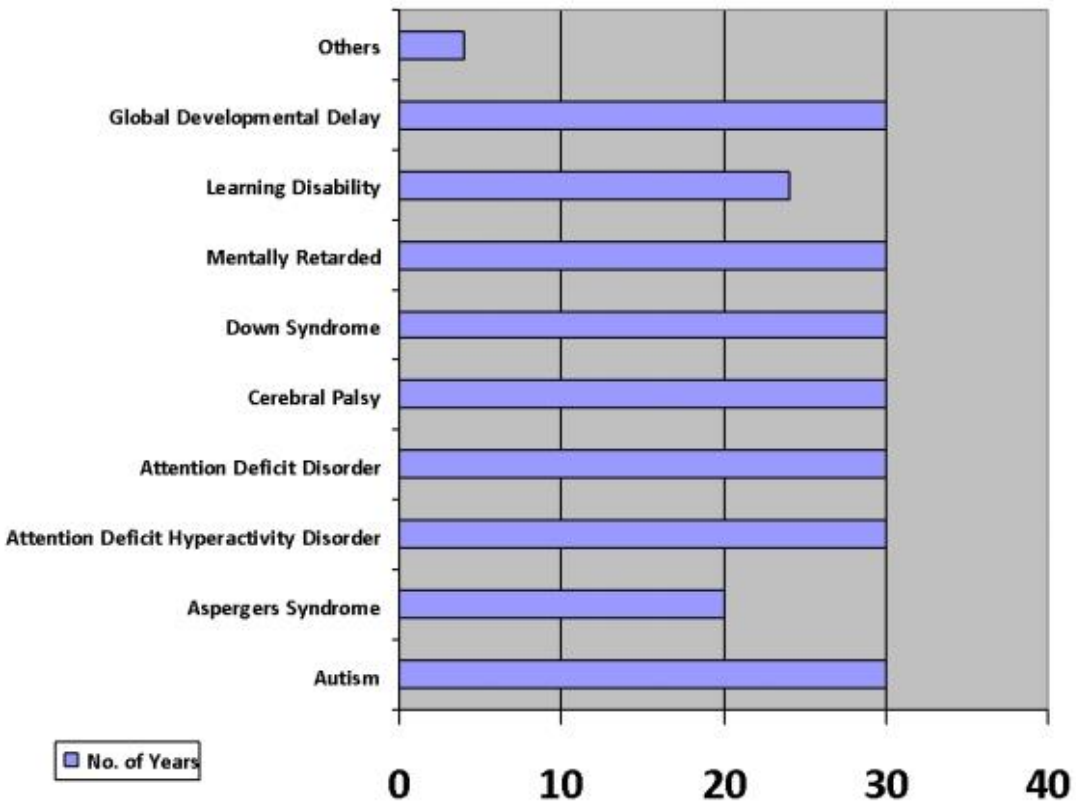
The pronounced focus on neurodevelopmental and learning-related conditions among the respondents underscores the pivotal role of occupational therapy in supporting children with these challenges. This data reinforces the importance of continued education and professional development in these areas, ensuring that therapists remain abreast of the latest research and evidence-based interventions to provide optimal care.

Furthermore, the presence of therapists with specialized expertise in less common pediatric conditions highlights the diverse skill set within the profession and the potential for collaboration and knowledge-sharing among practitioners. This collaborative approach

fosters a more comprehensive and integrated system of care for children with a wide range of needs.

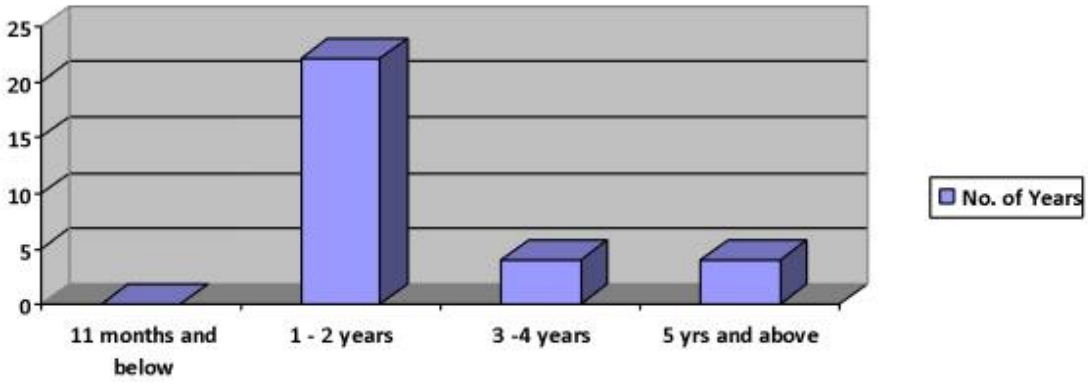
Moving forward, research should further explore the specific interventions and approaches employed by occupational therapists in addressing these diverse pediatric caseloads. Understanding the efficacy and impact of various treatment modalities can contribute to the development of evidence-based practice guidelines and ultimately enhance the quality of care provided to children and their families.

In conclusion, the survey data reveals a dynamic landscape of pediatric practice among the participating occupational therapists, characterized by a shared commitment to serving children with neurodevelopmental and learning challenges. The diverse range of experiences and expertise within this group fosters a collaborative and innovative approach to care, positioning occupational therapy as an indispensable component of comprehensive pediatric healthcare



DATA ON THE APPLICATION OF CAI:

Extent of Period of CAI Usage by the Respondent Occupational Therapists:



The survey results indicate that Computer-Assisted Instruction (CAI) is steadily gaining traction within the occupational therapy practices of the respondents. A significant majority (73%) have incorporated CAI into their therapeutic repertoire within the past one to two years, suggesting a recent surge in its adoption. This trend could be attributed to various factors, such as increased accessibility to technology, growing awareness of CAI's potential benefits, and evolving evidence-based practice guidelines.

While the majority of therapists are relatively new to CAI implementation, a notable portion (13%) has been utilizing CAI for a more extended period, ranging from three to four years or even five years and above. This seasoned group of practitioners likely possesses valuable insights into the long-term benefits, challenges, and best practices associated with CAI integration. Their experiences can serve as a valuable resource for those who are newer to CAI implementation, fostering knowledge-sharing and professional development within the field.

The observed distribution of CAI usage duration paints a picture of a dynamic and evolving landscape within the profession. It suggests that while CAI adoption is steadily increasing, there is still ample room for growth and further exploration of its full potential within occupational therapy practice. This presents an exciting opportunity for continued

research and innovation, as therapists delve deeper into the possibilities of CAI and its application across diverse pediatric populations and therapeutic contexts.

Furthermore, the presence of therapists with varying levels of CAI experience underscores the importance of ongoing professional development and knowledge exchange. Fostering opportunities for collaboration and mentorship can facilitate the seamless integration of CAI into practice, ensuring that therapists are equipped with the necessary skills and knowledge to leverage this technology effectively and ethically.

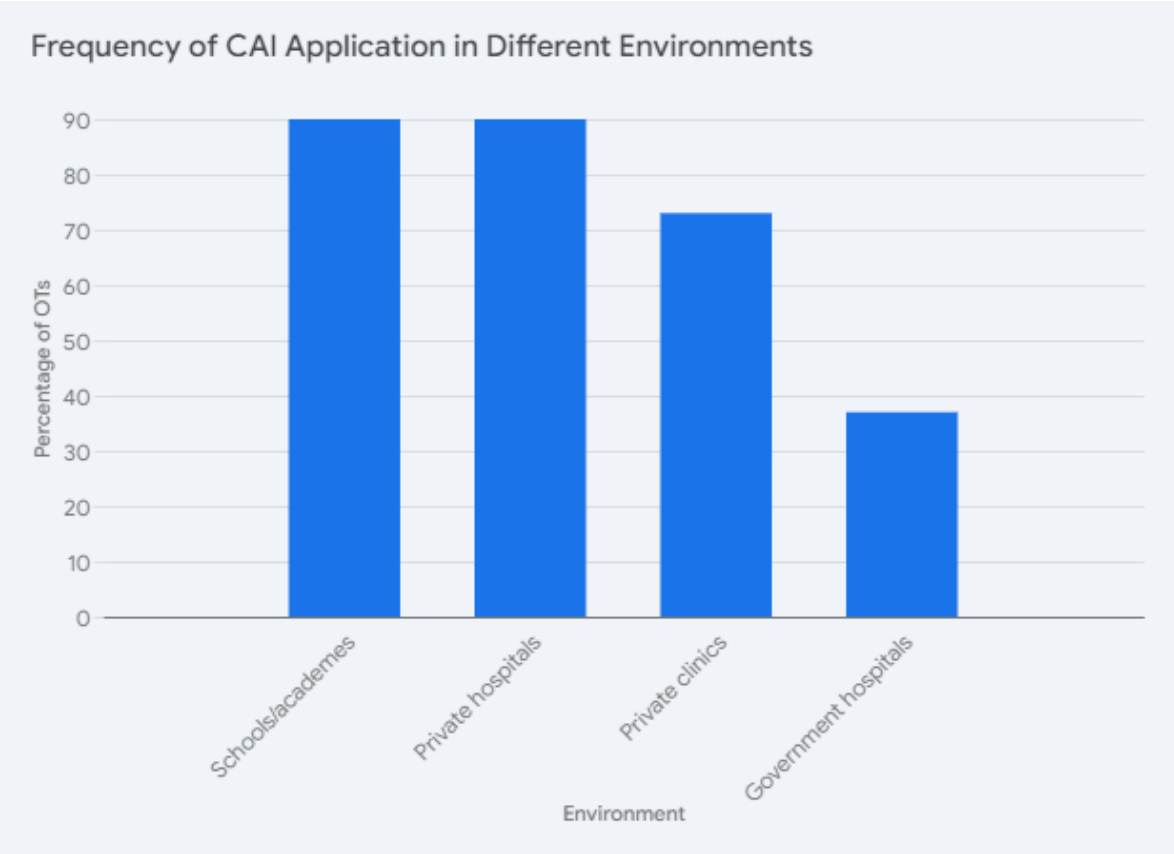
In conclusion, the survey findings provide a snapshot of CAI usage among the participating occupational therapists. The observed trend toward increasing adoption, coupled with the presence of both seasoned and newer users, creates a dynamic and promising landscape for the future of CAI in occupational therapy. As technology continues to advance and evidence-based practices evolve, the profession is poised to further harness the potential of CAI to enhance therapeutic outcomes and empower children with ASD to achieve their fullest potential.

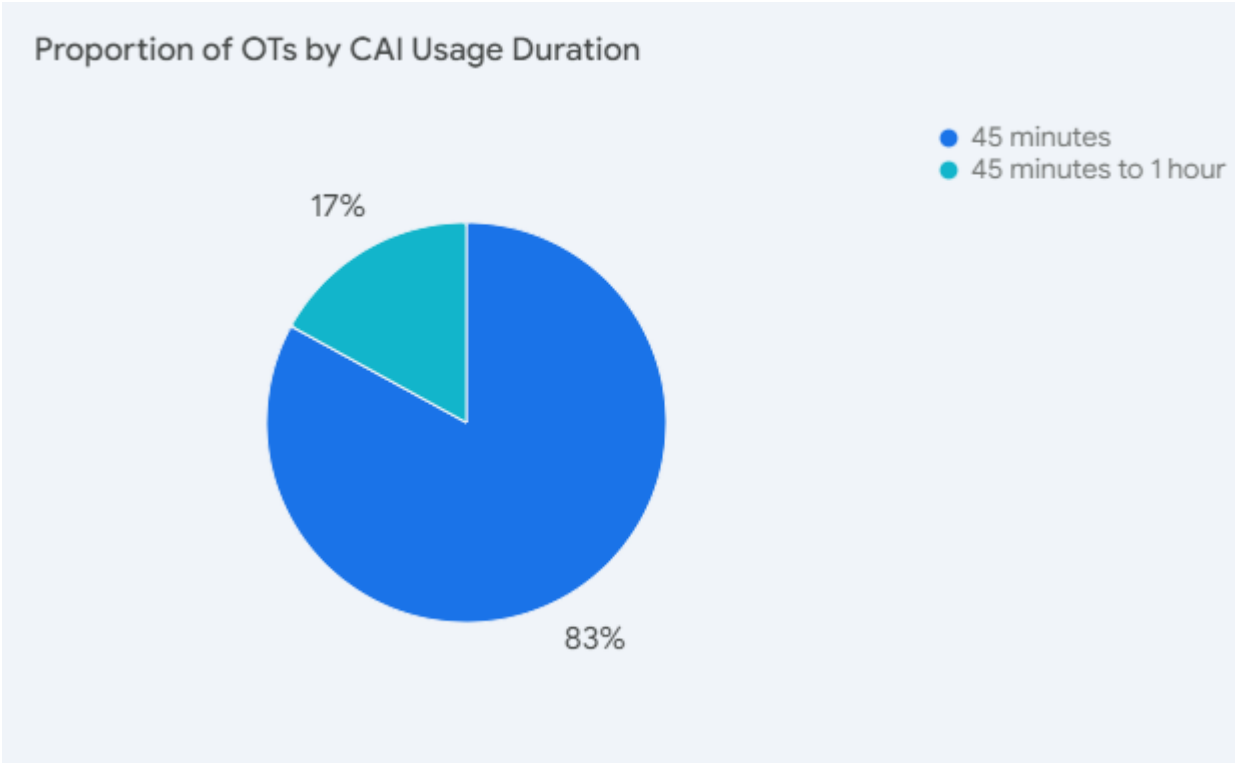
Time Spent in Using the CAI

The data provided highlights two key aspects of Computer-Assisted Instruction (CAI) usage among the surveyed Occupational Therapists (OTs): the duration of CAI sessions and the environments where CAI is most frequently employed. We will analyze and interpret these findings to provide a comprehensive understanding of CAI utilization patterns.

To present this information clearly, we will create two visuals:

1. Pie Chart: To illustrate the distribution of time spent using CAI.
2. Bar Chart: To depict the frequency of CAI application across different environments.


Frequency of CAI Application in Different Environments
90
80
70
60
50
40
30
20
10
0
Percentage of OTs
Schools/academes
Private hospitals
Private clinics
Government hospitals
Environment


Proportion of OTs by CAI Usage Duration
45 minutes
45 minutes to 1 hour
17%
83%

The survey results reveal insightful patterns in the utilization of Computer-Assisted Instruction (CAI) by occupational therapists.

Duration of CAI Usage

The predominant pattern observed is that the majority of occupational therapists (83%) dedicate approximately 45 minutes per session to CAI interventions. A smaller, yet noteworthy, proportion (17%) extend these sessions to a duration between 45 minutes and one hour. This suggests that while shorter durations are more typical, there is a recognized value in longer CAI sessions for certain therapeutic contexts or individual client needs.

Environment of CAI Application

The data highlights a clear preference for implementing CAI within educational and private healthcare settings. Schools and private hospitals emerged as the most frequent environments for CAI application, with 90% of respondents reporting regular use in these settings. This suggests that CAI is well-integrated into both educational and clinical contexts, serving as a valuable tool for supporting children with ASD across various aspects of their lives.

Private clinics also emerged as a prominent setting for CAI utilization, particularly among therapists engaged in private practice (73%). This finding underscores the adaptability of CAI across diverse practice settings and its potential to enhance therapeutic interventions in both individual and group contexts.

While less frequent than other settings, government hospitals were also identified as a context for CAI application by 37% of respondents. This suggests that while CAI adoption may be more nascent in public healthcare settings, it is gradually gaining recognition as a valuable therapeutic tool.

Overall Interpretation

The survey findings paint a picture of CAI as an increasingly prevalent and versatile tool within the realm of pediatric occupational therapy. The data suggests that therapists are

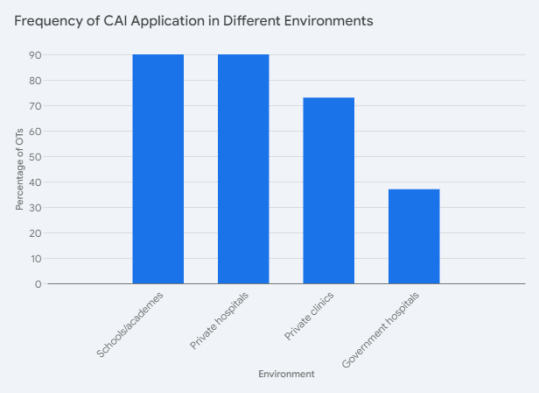
strategically integrating CAI into their practice, primarily within educational and private healthcare settings, and are dedicating a significant portion of their sessions to this modality. The observed trends highlight the growing recognition of CAI's potential to enhance therapeutic outcomes and support the diverse needs of children with ASD.

However, the relatively lower utilization of CAI in government hospitals underscores the need for further advocacy and education regarding its benefits and implementation strategies. By fostering greater awareness and access to CAI resources, we can ensure that all children with ASD, regardless of their socioeconomic background or access to healthcare, have the opportunity to benefit from this innovative therapeutic approach.

In conclusion, the survey results provide valuable insights into the current landscape of CAI utilization among occupational therapists. These findings can inform future research, professional development initiatives, and policy decisions aimed at optimizing the integration of CAI into occupational therapy practice, ultimately empowering therapists to provide the most effective and evidence-based interventions for children with ASD.

- ❖ Environment where CAI is Frequently Applied:

The data indicates where Computer-Assisted Instruction (CAI) is most commonly used by the surveyed Occupational Therapists. We will analyze this data to understand the primary settings for CAI implementation and any potential implications. We can leverage the previously generated bar chart:



The survey results highlight a clear trend in the environments where Computer-Assisted Instruction (CAI) is most frequently utilized by occupational therapists. **Schools/academes and private hospitals** emerged as the predominant settings, with 90% of respondents indicating frequent CAI application in these contexts. This suggests a strong integration of CAI within both educational and private healthcare sectors, likely reflecting the availability of resources and infrastructure to support its implementation.

Private clinics also constitute a significant setting for CAI use, with 73% of respondents, particularly those in private practice, reporting its frequent application. This suggests that CAI is viewed as a valuable tool for individualized therapy and tailored interventions, aligning with the personalized care often associated with private practice settings.

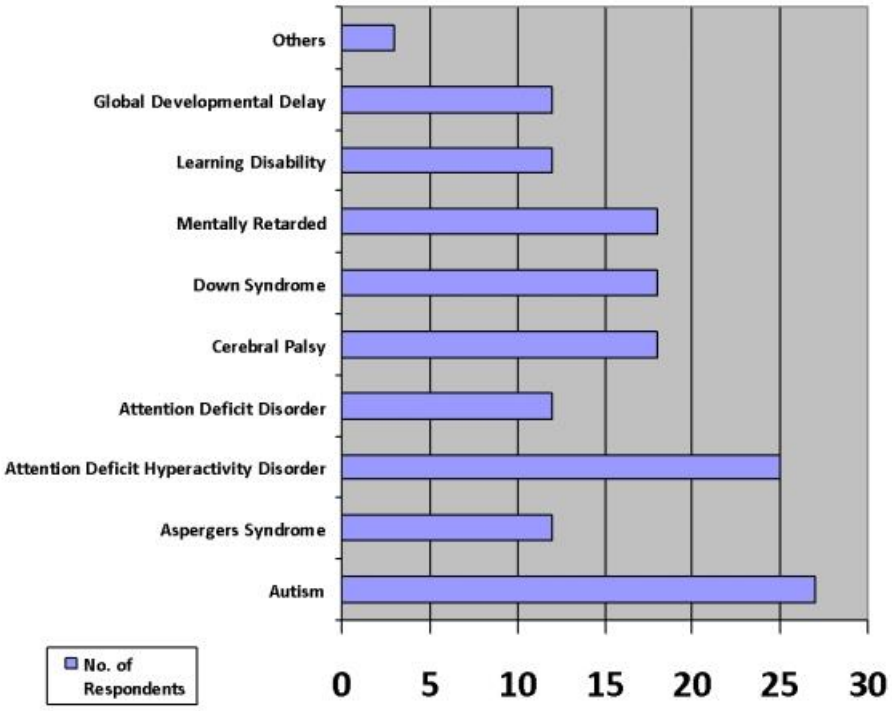
In contrast, **government hospitals** appear to be less frequent environments for CAI implementation, with only 37% of respondents reporting its use. This discrepancy might be attributed to various factors, such as budgetary constraints, limited access to technology, or a slower pace of adopting innovative practices within public healthcare institutions.

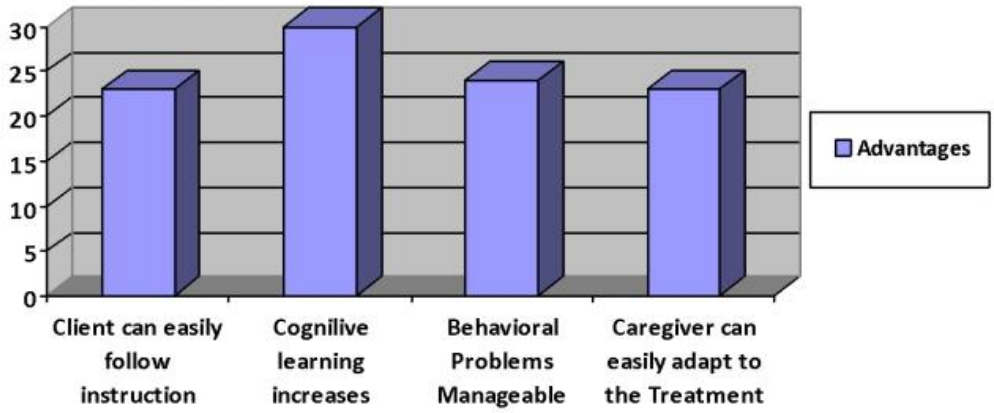
Overall, these findings underscore the growing prevalence of CAI in pediatric occupational therapy, particularly within educational and private healthcare settings. The data suggests that CAI is increasingly recognized as a valuable tool for enhancing therapeutic interventions and supporting the diverse needs of children with ASD. However, the disparity in CAI utilization between private and public healthcare settings highlights the need for further efforts to promote its adoption and integration across all sectors, ensuring equitable access to this beneficial technology for all children in need.

Various Pediatric Cases where the Respondents Applied CAI:

Ninety percent (90%) or twenty-seven (27) of the respondents are applying CAI to patients with autism spectrum disorder. Eighty-three percent (83%) or twenty-five (25) of the respondents said that they are implementing CAI to patients with attention deficit hyperactivity disorder. Sixty percent (60%) or eighteen (18) of the respondents are using

and global development depletion. Finally, ten percent (10%) or three (3) of the respondents are utilizing CAI with other types of pediatric cases.





CAI to treat patients who are mentally retarded and those with cerebral's palsy and down's syndrome. Forty percent (40%) or twelve (12) of the respondents said that they are using CAI with patients having asperger's syndrome, attention deficit disorder, learning disability

Possible Effects and Advantages of CAI:

The survey results unequivocally demonstrate the perceived positive impact of Computer-Assisted Instruction (CAI) in pediatric occupational therapy, particularly for children with Autism Spectrum Disorder (ASD). The unanimous agreement among respondents that CAI yields positive outcomes underscores its efficacy and value in this therapeutic context. The specific identification of enhanced cognitive learning as a key benefit further solidifies CAI's role in promoting intellectual development and skill acquisition in this population.

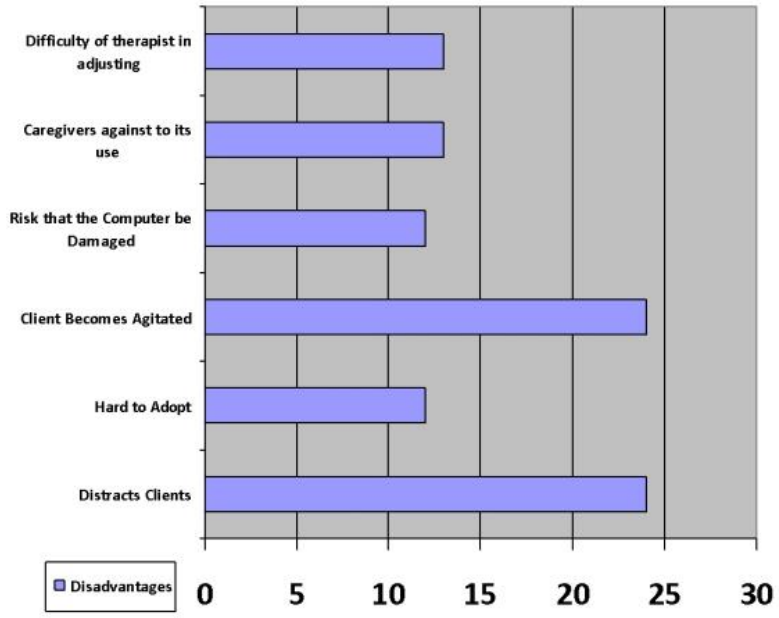
Moreover, the overwhelming majority of respondents (77%) highlighted the user-friendliness of CAI, emphasizing its capacity to facilitate both patient engagement and caregiver participation in the therapeutic process. The ability of CAI to provide clear and easily comprehensible instructions empowers children to actively participate in their therapy, while its adaptability to home-based settings enables caregivers to seamlessly extend therapeutic interventions beyond the clinical environment, fostering consistency and continuity of care.

Finally, the substantial proportion of respondents (80%) who recognized CAI's effectiveness in managing behavioral challenges further attests to its multifaceted benefits. This suggests that CAI not only facilitates cognitive development but also plays a crucial role in addressing and modulating behavioral issues, thereby contributing to a more holistic and comprehensive approach to pediatric care.

In summary, the survey findings provide compelling evidence for the positive impact of CAI in pediatric occupational therapy, particularly for children with ASD. The perceived benefits span cognitive, behavioral, and functional domains, highlighting CAI's potential to enhance therapeutic outcomes and empower both patients and caregivers. These results underscore the importance of integrating CAI into standard occupational therapy

practice, thereby harnessing the power of technology to optimize interventions and promote the well-being of children with ASD.

Disadvantages of CAI:



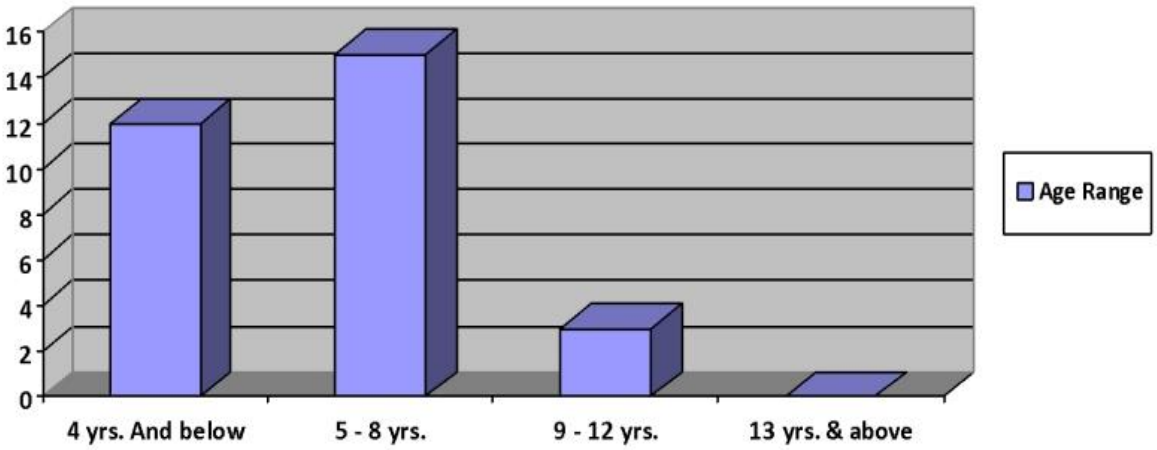
Among the challenges associated with the application of Computer-Assisted Instruction (CAI), 80% of the respondents, or twenty-four individuals, noted that clients often experience increased distraction and agitation during its use. This suggests that while CAI can be beneficial, it may also introduce difficulties in maintaining client focus, potentially hindering the effectiveness of the therapy.

Furthermore, 43% of the respondents, or thirteen individuals, reported that some caregivers express resistance to the use of CAI, and therapists themselves may struggle to adapt to this technology. This resistance could stem from a lack of familiarity or comfort with digital tools, highlighting the need for additional training and support for both caregivers and therapists.

Lastly, 40% of respondents, or twelve individuals, expressed concerns that patients might struggle to adapt to CAI, and there is a potential risk of damage to the equipment. This indicates a need for careful consideration of the implementation environment and

additional measures to ensure that the technology is both accessible and durable in clinical settings.

Best Age Range of a Patient with a Pediatric Case to apply CAI:

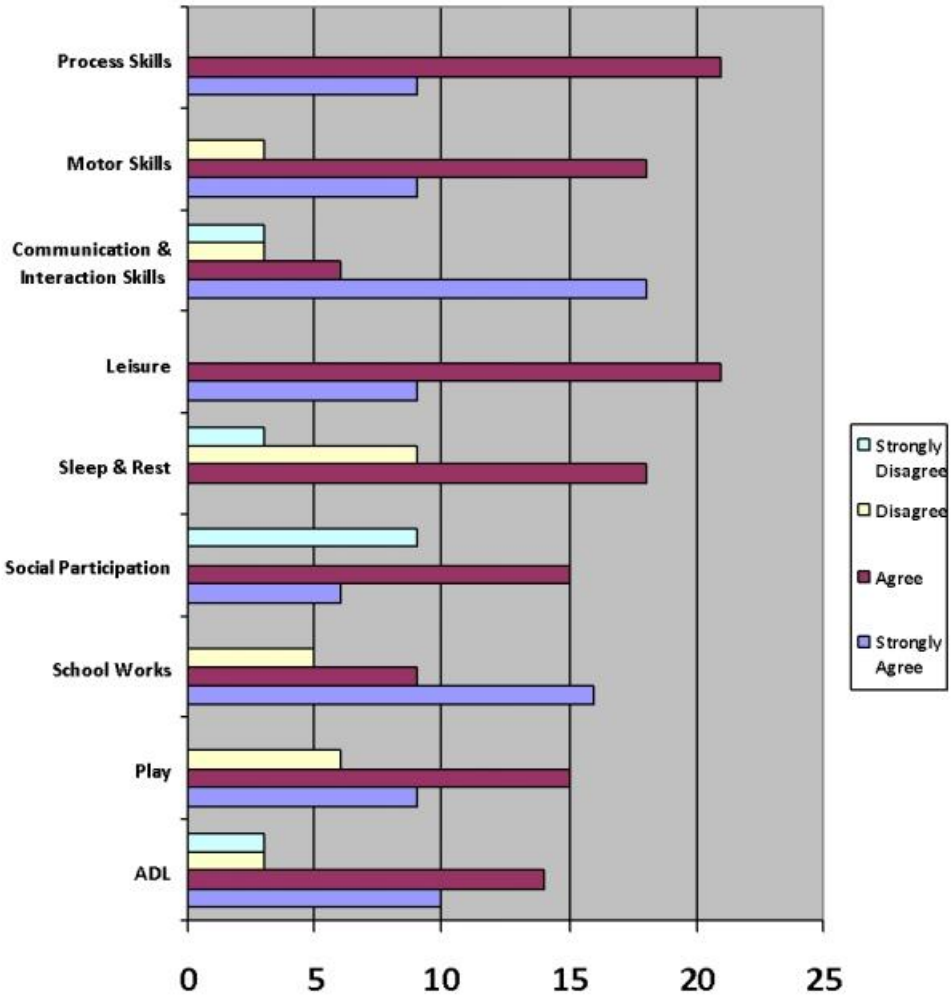


Half of the respondents (50%) indicated that the optimal age range for applying Computer-Assisted Instruction (CAI) to pediatric patients is between five and eight years old. This suggests that children within this age group may benefit the most from CAI, likely due to their developmental stage, where cognitive and motor skills are sufficiently advanced to engage with the technology effectively.

In contrast, 40% of the respondents, or twelve individuals, believe that CAI is most effectively applied to children aged four years and below. This perspective may reflect the potential for early intervention, where younger children can begin benefiting from structured, technology-based learning and therapy from an early age.

The remaining 10% of respondents, or three individuals, opined that the most suitable age range for CAI application is between nine and twelve years. This minority view suggests that older children can still benefit from CAI, although perhaps with different objectives or outcomes compared to younger age groups. This range might focus more on refining existing skills and addressing specific therapeutic goals.

Perceptions of Occupational Therapists on whether CAI helps in the development of Performance Areas and Performance Skills of patients with pediatric cases:



The data shows the perceptions of Occupational Therapists on whether CAI helps in the development of various Performance Areas and Performance Skills of patients with pediatric cases. We will analyze this data to understand the areas where CAI is perceived to be most and least effective and present the findings in a clear and concise manner. We can also create a visual to represent this data effectively.

The survey results reveal a generally positive perception among occupational therapists regarding the impact of Computer-Assisted Instruction (CAI) on various performance areas and skills in pediatric patients. Notably, CAI is perceived to be most effective in enhancing leisure skills and process skills, with 70% of therapists agreeing with its positive

influence in these domains. This suggests that CAI can significantly contribute to children's ability to engage in enjoyable and meaningful activities, as well as develop the cognitive and organizational strategies necessary for successful task completion.

Furthermore, a majority of therapists also acknowledged the positive impact of CAI on school works (53%), social participation (50%), play (50%), sleep and rest (60%), and communication skills (60%). These findings highlight the versatility of CAI in addressing a wide range of developmental needs, supporting children's academic performance, social interactions, playfulness, sleep hygiene, and communication abilities.

While the perceived benefits of CAI are evident across multiple domains, the relatively lower agreement rates for its impact on motor skills (40%) and activities of daily living (ADL) (47%) suggest potential areas for further exploration and refinement. It is possible that CAI may be less effective in directly addressing these areas, or that therapists may require additional training and resources to leverage CAI effectively for these specific goals.

Overall, the survey findings paint a promising picture of CAI's potential to enhance various performance areas and skills in pediatric patients, particularly those with ASD. The perceived benefits span a wide range of domains, highlighting the versatility and adaptability of CAI as a therapeutic tool. However, the data also suggests areas for further research and development to maximize the effectiveness of CAI across all aspects of pediatric occupational therapy practice.

Chapter V

CONCLUSION AND RECOMMENDATIONS

Conclusion:

The findings of this study provide compelling evidence for the widespread adoption and perceived efficacy of Computer-Assisted Instruction (CAI) among Filipino occupational therapists working with pediatric populations, particularly those with Autism Spectrum Disorder (ASD). The unanimous affirmation of CAI's positive impact on patient outcomes underscores its value as a therapeutic tool, aligning with the growing body of literature that supports the use of technology in enhancing occupational therapy interventions.

The specific identification of cognitive learning as a key area of improvement highlights CAI's potential to facilitate skill acquisition and intellectual development in children with ASD. This aligns with the core principles of occupational therapy, which emphasize the promotion of cognitive abilities and adaptive behaviors to support participation in meaningful activities and daily life tasks. The ability of CAI to provide structured, individualized learning experiences, coupled with its interactive and engaging nature, may contribute to its effectiveness in fostering cognitive growth and skill mastery.

Furthermore, the study sheds light on the practical advantages of CAI from the perspectives of both therapists and caregivers. The ease with which patients can follow instructions within CAI programs, coupled with the adaptability of these programs to home-based settings, fosters a sense of empowerment and autonomy for both children and their families. This accessibility and flexibility enable the continuation of therapeutic interventions beyond the clinical environment, promoting consistency and generalization of skills, which are crucial for long-term progress and functional independence.

The perceived effectiveness of CAI in managing behavioral challenges further underscores its multifaceted benefits in pediatric occupational therapy. By providing structured activities, clear expectations, and immediate feedback, CAI can help children with ASD develop self-regulation skills and navigate challenging behaviors, ultimately fostering greater participation and engagement in their daily lives. This aligns with the

occupational therapy focus on promoting adaptive behaviors and supporting individuals in achieving their optimal level of functioning within their environments.

The study also revealed that the optimal age range for CAI implementation, as perceived by the therapists, is between five and eight years. This finding suggests that early intervention with CAI may be particularly beneficial in capitalizing on the critical developmental window during early childhood. However, further research is needed to explore the effectiveness of CAI across different age groups and developmental stages, ensuring that interventions are tailored to the unique needs and capabilities of each child.

Finally, the positive impact of CAI on performance areas and skills related to leisure and process skills highlights its potential to enhance children's engagement in meaningful activities and their ability to navigate the steps involved in completing tasks. This aligns with the core tenets of occupational therapy, which emphasize the importance of fostering participation in leisure activities and developing the process skills necessary for successful engagement in daily life occupations.

In conclusion, this study provides valuable insights into the current utilization and perceived benefits of CAI among Filipino occupational therapists working with pediatric populations, particularly those with ASD. The findings support the integration of CAI as an effective and versatile tool within occupational therapy practice, capable of enhancing cognitive learning, facilitating behavioral management, and promoting skill development across various domains. By embracing technological advancements and incorporating evidence-based interventions like CAI, occupational therapists can continue to evolve their practice and empower children with ASD to achieve their fullest potential.

However, it is important to acknowledge that the study's findings are based on the perceptions of a relatively small sample of occupational therapists. Further research is warranted to explore the long-term impact of CAI interventions on various patient outcomes, including social participation, academic performance, and overall quality of life. Additionally, future studies could investigate the effectiveness of CAI in addressing specific skill deficits associated with ASD, such as sensory processing difficulties or motor

coordination challenges. By continuing to explore the potential of CAI and its application within occupational therapy, we can further refine our understanding of its benefits and challenges, ultimately leading to more effective and personalized interventions for children with ASD.

Recommendation:

The findings of this study illuminate the promising potential of Computer-Assisted Instruction (CAI) as a therapeutic tool within the realm of pediatric occupational therapy in the Philippines. However, to fully harness its transformative capabilities and ensure its seamless integration into standard practice, concerted efforts are required across multiple fronts.

1. Advancing the Research Agenda: Rigorous Exploration of CAI's Efficacy and Impact

This study serves as a crucial stepping stone in the exploration of CAI's potential within the Philippine context. However, further research is imperative to establish a robust evidence base for its application. Future studies should adopt rigorous methodological designs, incorporating larger sample sizes, diverse geographical representation, and longitudinal data collection to comprehensively assess the long-term impact of CAI on various patient outcomes, including social participation, academic performance, and overall quality of life.

Moreover, there is a pressing need to investigate the effectiveness of CAI in addressing specific skill deficits associated with ASD, such as sensory processing difficulties or motor coordination challenges. By elucidating the precise mechanisms through which CAI exerts its therapeutic effects, we can develop more targeted and individualized interventions that optimize outcomes for each child.

Additionally, research should delve deeper into the factors influencing the successful implementation of CAI within diverse clinical settings. This could include exploring the impact of therapist training and support, caregiver involvement, and technological infrastructure on the effectiveness of CAI interventions. By identifying and addressing potential barriers to implementation, we can pave the way for the widespread and equitable adoption of CAI across the Philippine healthcare landscape.

2. Empowering the Profession: Capacity Building and Knowledge Dissemination

The effective integration of CAI into occupational therapy practice necessitates a multi-pronged approach to capacity building and knowledge dissemination. This entails:

Comprehensive Training and Education: Providing occupational therapists with comprehensive training on the selection, implementation, and evaluation of CAI tools is crucial. This training should encompass both theoretical knowledge and practical skills, equipping therapists to confidently navigate the technological landscape and leverage CAI to its full potential.

Mentorship and Collaboration: Establishing mentorship programs and fostering collaborative networks can facilitate knowledge exchange and provide ongoing support for therapists at various stages of their CAI journey. Experienced practitioners can share their insights and best practices, while newer therapists can benefit from the guidance and expertise of their seasoned colleagues.

Accessible Resources and Information: Developing and disseminating accessible resources, such as evidence-based practice guidelines, case studies, and instructional videos, can empower therapists to make informed decisions about CAI implementation and stay abreast of the latest advancements in the field. The creation of an online platform or repository for sharing CAI-related resources and fostering professional dialogue can further enhance knowledge dissemination and collaboration.

3. Advocating for Change: Promoting CAI Integration and Accessibility

While the survey results indicate a growing recognition of CAI's benefits, its full potential remains untapped within the Philippine context. To realize the transformative power of CAI, concerted advocacy efforts are necessary. This involves

Engaging Stakeholders: Fostering dialogue and collaboration among key stakeholders, including occupational therapists, healthcare administrators, policymakers, educators, and families, is crucial. By highlighting the evidence-based benefits of CAI and addressing concerns regarding its implementation, we can create a collective vision for its widespread adoption.

Influencing Policy: Advocating for the inclusion of CAI in national healthcare policies and guidelines can ensure its recognition as an essential component of evidence-based practice. This may involve lobbying for increased funding for CAI resources, integrating CAI training into occupational therapy curricula, and promoting its use within both public and private healthcare settings.

Addressing the Digital Divide: Recognizing the potential for disparities in access to technology, particularly in underserved communities, is crucial. Advocating for equitable access to CAI resources and infrastructure can help bridge the digital divide and ensure

that all children, regardless of their socioeconomic background, have the opportunity to benefit from this innovative therapeutic approach.

4. Embracing the Future: A Vision for CAI-Enhanced Occupational Therapy Practice

While the traditional tools and techniques of occupational therapy remain invaluable, the integration of CAI represents a paradigm shift in the profession's approach to care. By harnessing the power of technology, we can create more engaging, personalized, and effective interventions that empower children with ASD to achieve their fullest potential. The future of occupational therapy lies in embracing innovation, leveraging evidence-based practices, and collaborating across disciplines to create a more inclusive and accessible healthcare landscape for all.

The recommendations outlined above, while ambitious, are grounded in the belief that CAI has the potential to revolutionize occupational therapy practice for children with ASD in the Philippines. By investing in research, education, advocacy, and technological infrastructure, we can create a future where CAI is seamlessly integrated into standard practice, empowering therapists to provide the highest quality of care and enabling children with ASD to thrive and participate fully in their communities.

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Questionaire:

Questions for Licensed Occupational Therapists practicing in Metro Manila:

1) **Are you aware of Computer Assisted Instruction (CAI), As part of Treatment plan of some Occupational Therapist?**

YES NO

( ) ( )

2) **Do you think that Autism will benefit from Computer Assisted Instruction (CAI)?**

YES NO

( ) ( )

3) **Do you think that Philippines is prepared for this new line of Treatment plan in Occupational Therapy?**

YES NO

( ) ( )

4) **Are the parents, schools, Hospital/Clinic in Metro Manila aware of the Benefits of Computer Assisted Instruction (CAI)?**

YES NO

( ) ( )

5) **Do you think parents, school, hospital/clinic would be willing to add more expenditure for financing Computer Assisted Instruction (CAI)?**

YES NO

( ) ( )

6) **Do you think Computer Assisted Instruction (CAI) is applicable as part of Treatment Plan in Occupational Therapy?**

YES NO

( ) ( )

7) **Do you think Computer Assisted Instruction (CAI) will affect the curiculum of Treatment Plan in Occupational Therapy?**

YES NO

( ) ( )

8) **Do you view Computer Assisted Instruction (CAI) as a burden for Occupational Therapist in implementation?**

YES NO

( ) ( )

9) **Do you think Computer Assisted Instruction (CAI) is beneficial to Autism**

YES NO

( ) ( )

10. Are you willing to implement Computer Assisted Instruction (CAI) as part of the Treatment Plan?

YES NO

( ) ( )