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**Title:** The relationship of pencil grasp on college students' handwriting speed and legibility.

**Researchers:** Beth Gladson OTS and Lalit J Shah Ed. D. OTR/L

**Research Committee Chair:** Dr. Lalit J. Shah Reader: Dr. Ellen McLaughlin

**Abstract:** Handwriting is an important skill needed to express oneself in written form. Speed and legibility are two major components of handwriting that are believed to be affected by pencil grasp. The purpose of this study was to build upon the study by Shah, Doxsee, Gordon, and Porcaro (2006) and to determine if handwriting speed and legibility in adults is impacted by pencil grasp. This was a non-experimental, correlational study. A convenient sample of 100 college students (81% female) with no visible hand and/or motor deficits was used, and the subjects were timed while copying a 382-word excerpt. The Minnesota Handwriting Assessment was used to analyze handwriting legibility. A modified Schneck's grasp scale was used to identify each subject's pencil grasp. Over 85% of the subjects used some form of the dynamic tripod grasp. Mean handwriting speed was 95.24 letters/min and mean legibility score was 28.93. No significant correlation was found between grasp and speed ( $p = 0.696$ ) or grasp and legibility ( $p = 0.320$ ), indicating pencil grasp may have no effect on handwriting speed or legibility

**Title:** Screen Doors 2000 vs. Windows 7 Researchers: Lorraine Beebe OTS, Lori Berends OTS, Yun Chung OTS, and Marissa Hardcastle OTS

**Research Committee Chair:** Dr. Lalit J. Shah

**Reader:** Mr. Denis Anson MS OTR

**Abstract:** OBJECTIVE. This study investigated whether there is a difference between typing speed and accuracy with a commercial on-screen keyboard versus a free, operating system built-in on screen keyboard for people with a spinal cord injury (SCI) or other spinal disease. METHOD. A total of 12 subjects, 10 females and 2 males ages 18 to 31 years, completed a single-subject, repeated measure design. The subjects used Windows 7 (WK) and ScreenDoors 2000 (SD) to measure productivity using typing speed and accuracy. RESULTS. The data analysis indicated that for speed, the free WK on-screen keyboard outperformed the commercial SD. This was demonstrated by the fact that 10 subjects typed faster on the WK as compared to 2 subjects that typed faster on SD. As for typing accuracy, there were no differences between the two programs as results were split evenly between them.

**CONCLUSION.** These results were pertinent to people with a SCI that cannot use a physical keyboard, specifically at the levels C3-C5 levels. As the Windows 7 on-screen keyboard was found to have superior typing speed and at least equal typing accuracy, this research indicated that it may not be necessary for persons with a SCI to purchase the commercial program.

**Title:** Dog-Assisted Therapy for Residents of Long-Term Care Facilities: An Evidence-Based Practice Review with Implications for Occupational Therapy Practice

**Researchers:** Marisa Cooper OTS, Nicole DiGiovanni OTS, Alexandria Litchkofski OTS, Andrea Nichols OTS, and Ashleigh Ramsey OTS

**Research Committee Chair:** Dr. Joseph Cipriani Jr.

**Reader:** Dr. Gwen Bartolacci

**Abstract:** Aim: To conduct an evidence-based practice review of the literature to determine whether individuals in long-term care facilities receiving dog-assisted therapy have an increased quality of life compared to individuals who do not receive dog-assisted therapy. Methods: A comprehensive computer-aided search of the literature was conducted. A total of 61 studies were retrieved; 19 met inclusion criteria. The 19 studies were reviewed using the McMaster's critical appraisal tool for quantitative research and each study was assigned a numerical score based on the number of criteria met (0-100%). Results: Three randomized control trials, 11 cohort studies, four before and after, and one single case design were found. Participants had dementia or a cognitive disorder in the majority of studies reviewed. Outcomes examined included emotional regulation, activities of daily living, communication/social, cognitive, sensory-perceptual, and motor/praxis skills. Twelve of the 19 studies reported statistically significant findings of improved outcomes for dog-assisted therapy. Number of McMaster's criteria met in each study ranged from 31% to 92%.

**Conclusions:** Though a majority of the studies found statistical significance to support dog-assisted therapy, there remains a lack of quality research with rigorous designs published in the occupational therapy literature.

#### **Podium Presentations:**

**Title:** Effectiveness of the Sequential Oral Sensory Feeding Program

**Researchers:** Jenna Kinzinger OTS, Devin Koslap OTS, Stephanie May OTS, Samantha Scalpone OTS, and Sarah Terry OTS

**Research Committee Chair:** Dr. Lalit J. Shah

**Reader:** Dr. Joseph Cipriani

**Abstract:** The occupational therapy profession manages feeding dysfunction in children through various approaches including sensory, motor, behavioral, medical, oral, and nutritional interventions that allow children to interact with food. The Sequential Oral Sensory (SOS) Feeding Program recognizes that children learn about the world through play which is the medium through which the SOS program operates. This twelve-week program is designed to address the child's feeding needs holistically. The study was an ex-post facto design to determine the effectiveness of the SOS feeding program at a local facility based on parents reporting through a Likert scale based survey. This study found that food aversions, poor feeding habits and/or food refusal were the main feeding problems and developmental delays and Autism Spectrum Disorders were the diagnoses treated with the SOS Feeding Program. Of the three completed charts the researchers found that parents reported an overall improvement in the categories of parent satisfaction and parents' perspective of the child's feeding performance. Because of the limited number of completed charts, results of this study could not determine effectiveness of the SOS Feeding Program. More consistency in documentation must occur in order to conclude the effectiveness of the feeding program.

**Title:** A Study of a Health Promotion and Wellness Program for Elderly Individuals in the Community

**Researchers:** Jeffrey Crane OTS, Dawn Hnat OTS, Anne Kienle OTS, and Grace McDermott OTS

**Research Committee Chair:** Dr. Grace Fisher

**Reader:** Dr. Gwen Bartolacci

**Abstract:** Objective: The purpose of this study was to assess the effects of an occupation-based health education program and its impact on the quality of life of older adults living independently. Method: The research project conducted was a quantitative quasi-experimental pre-test/post-test study with a descriptive qualitative component. We compared pre- and post-test scores on a standardized assessment in order to determine the effects of a health promotion program on quality of life. Results: The pre- and post-test scores on the WHOQOL-BREF assessment showed positive average gains for three out of the four quality of life domains. Although not statistically significant, client self-ratings in the physical, psychological, and environmental domains were positively impacted by the program. The scores declined in the social domain. As illustrated by the qualitative data, all participants reported that the

program made a positive impact on their lives. They agreed that it was beneficial and understood how the topics related to their quality of life.

**Title:** SWYPE versus Screen Doors 2000

**Researchers:** Christine Brandon OTS, Amanda Davis OTS, Melanie Hill OTS, Brittany Michalik OTS, and Courtney Sennett OTS

**Research Committee Chair:** Mr. Denis Anson MS OTR

**Reader:** Dr. Lalit J Shah

**Abstract:** As technology evolves, more efficient methods of communication become possible. Some applications of technology produce substantial functional differences, while others produce only change. The purpose of this quasi-experimental study was to measure and compare speed and accuracy of two alternative input systems, a novel onscreen keyboard, Swype, and a contemporary version of an onscreen keyboard, Screen Doors 2000. Twenty subjects were randomly selected for this study. Seventeen subjects completed nine timed typing trials, using ScreenDoors 2000 and Swype, and three completed 18 timed typing trials using only Swype. Typing speed and accuracy were compared for the 17 subjects who used both input methods using matched-pairs t-tests. The results indicated a statistically significant difference at the 0.05 level of both typing accuracy and speed, favoring ScreenDoors 2000 over Swype. However, the mean functional difference was only five words per 20 minute typing trial and one error per 20 minute trial. These would not be considered clinically significant. Although the results of the study slightly favored the ScreenDoors 2000 keyboard, the subjects in the study reported a preference for the Swype input method and felt that they could get much faster using Swype than with the conventional on-screen keyboard.

**Title:** Determining the Test-Retest Reliability and Inter-Rater Reliability of the Americans with Disabilities Act - Compliance Assessment Toolkit (ADA-CAT)

**Researchers:** Caitlin Cavanaugh OTS, Meghan Franz OTS, Nicole Iaconetti OTS, and Kiersten Whitaker OTS

**Research Committee Chair:** Dr. Lalit J Shah

**Reader:** Mr. Denis Anson MS OTR

**Abstract:** This study examined the test-retest reliability and inter-rater reliability of the Americans with Disabilities Act - Compliance Assessment Toolkit (ADA-CAT). Four raters used the ADA-CAT to measure eight elevators independently and on two separate occasions. A minimum of three weeks was chosen between measurements to increase the test-retest reliability and ensure that the data remains purely analytical minimizing any behavioral influences on data collection. The researchers were able to correlate the scores of the different elevators using the Pearson Product Method. When scores from all four researchers were compared, the inter-rater reliability was .6, indicating relatively average significance. Through data analysis, results showed that three of the researchers had closely related scores while one differed. Removing this individual's scores increased the inter-rater reliability score to above .9, indicating a high significance. When the scores of the raters were assessed for test-retest reliability, using the Pearson Product Method, the correlation was .97, indicating a high significance. Based on these results, it has been found that the ADA-CAT is a reliable tool to accurately measure compliance with accessibility standards. Although both inter-rater and test-retest reliability were significant, further instructions may be required to provide explanation on ideal conditions and signage requirements.

**Title:** Typing Styles in Current Usage

**Researchers:** Alicia Bryk OTS, Hannah Muller OTS, Courtney Otto OTS, Jenna Rakowsky OTS, and Melissa Templeton OTS

**Research Committee Chair:** Denis Anson

**Reader:** Dr. Lalit J Shah

**Abstract:** From the beginning of human existence, we have found various ways to record and share information with others. From cave drawings to the Dead Sea Scrolls, we have seen how data was recorded in our past. Today's world is very different, with the emergence of computer technology to share information. CleanKeys is a company that is developing a sealed touch input keyboard that can be easily cleaned to prevent the spread of bacteria. The company needed to know how individuals type today, and this study serves to help them answer that question. Previously, there were no studies that analyzed the typing styles of individuals. Typists were described as "touch typists" and "hunt-and-peck typists". Based on the data collected from observation of individuals typing and analysis of the excerpts they were asked to type, we have identified three groups of typists rather than the previously

described two groups. This research shows how what we had originally thought about various age groups and typing speeds, accuracy, and typing styles does not reflect reality. Occupational therapists can apply this data to set realistic goals for their patients in a clinical setting.

**Title:** Model of Occupational Empowerment and Gunnarsson's Tree Theme Method: An Intervention Program for Mothers in Recovery

**Researchers:** Jillian Cardinale OTS, Lauren Klug OTS, Sara Ravier OTS, and Jennifer Savignano, OTS

**Research Committee Chair:** Dr. Grace Fisher

**Reader:** Ms. Dawn Evans MS OTR/L

**Abstract:** Purpose: This study investigated Gunnarsson's Tree Theme Method as an occupational therapy intervention program for mothers in recovery from addiction in accordance with Fisher and Hotchkiss's Model of Occupational Empowerment (2008). Methods: Each session of this mixed design study consisted of relaxation exercises, discussions on self-help readings, and participation in the Tree Theme Method. Results: Two participants improved their personal growth initiative. Participant reflection provided insight into the women's inner feelings.

**Conclusion:** Fisher and Hotchkiss's model (2008) was supported as the women achieved personal growth. Further research is needed concerning how this may guide occupational therapy practice with disadvantaged populations.