RESEARCH ARTICLE

ORIGAMI AS A TOOL FOR SOCIAL WORKERS TO ASSESS SCHOOL-AGE CHILDREN

Francinne Anez-Moronta*#, Julie Piepenbring#, Todd Roufuth***#**

#Southern Connecticut State University, New Haven, United States

Abstract

Assessment is a critical component of the social work field. It is crucial, as it identifies the essential needs and wants of the client. Origami is a beneficial tool used by other mental health professionals to observe and evaluate children's dimensions such as social and motor skills, frustration, self-regulation, attention-concentration, and more however, little research has examined origami in the context of assessments used by social workers with children. This primarily qualitative case study explores how social workers can benefit from origami as an assessment tool for five to twelve-year-old children. Sixteen social workers (n=16) completed an online survey about the benefits of using origami to help assess and identify children's current issues. Twelve codes and four themes were created. Results correlate with previous mental health literature stating that origami is a helpful assessment aid tool to observe motor skills, follow directions, self-regulation, social skills, creativity, spatial awareness, problem-solving, concentration, and self-esteem among children. This research provides new knowledge to help social workers assess children. It provides social workers with a tool that other mental health professionals are benefiting from. Additionally, it introduced social workers to an assessment aid that is considered easy to use, non-threatening simple, and without a cultural barrier. Additionally, social workers interested in other ways to understand children also benefit from this research. ASEAN Journal of Psychiatry, Vol. 22(3): May 2021: 1-17.

Keywords: Children, Origami, Assessment Tool, School, Social Worker, Mental Health

Introduction

"In Origami it is the doing, the handling - doing with the hands - that creates structure outside our skin, that has structural similarities to the things, that are created in our mind as we do" - Thoki Yenn [1].

Statement of purpose

Assessment is a critical component of the social work field. It is defined as the process of data collection in order to identify a client's strengths and problems [2]. The quality of an assessment is crucial, as it will identify what are the most essential needs and wants of the client [3]. The Council on Social Work Education (CSWE) designated "assessments" as the seventh competency to be used when training graduate social work students within an accredited Master of Social Work programs. There are many ways to assess children; however, [4] claims that origami, the Japanese art of paper folding, is a safe, clean, simple, and easy-to-manage activity to use in therapy [5]. It is not expensive [6,7] it is not complicated [8] it does not have a cultural barrier, so individuals can use it to communicate beyond language limitations [9,10] it is non-threatening. There are no IQ requirements (Kanazawa, 2016); and it creates a pleasant atmosphere [11].

Additionally, individuals of all ages can do origami, from young children(kindergarteners) to older adults, since it is easily adapted according to the developmental stage and needs of the individual [12,13]. Origami also helps to build rapport and relationship with the client [14,15].

Origami has been shown to be very useful as an assessment and therapy tool used by different professionals, including occupational therapists,

speech therapists, art therapists, psychologists, and psychiatrists and a small number of social workers [16,17]. For example, Gold demonstrated that origami had been used to assess a child's frustration level, compulsively, attention-concentration span, organization, accuracy, patience, and creativity.

However, researchers such as have emphasized the need to expand origami research in relation to its effectiveness among children [18]. A social worker, states explicitly that little research has examined origami in the context of assessments done by social workers among children.

As previously mentioned, most research has been conducted in the context of other professions, such as psychiatric, psychology, occupational therapy, speech therapy, art therapy and education [19,20]. Consequently, this research intends to fill the gap between origami assessment and social work literature, as only a small number of social workers use origami as an assessment tool.

According to, because social work is linked to justice, then an assessment is part of a political activity "if the social work professional takes seriously the mandate of working toward social and economic justice, assessment must also include honestly looking at issues around power, including systems and relationships". Therefore, the need for assessments motivates social workers to continue looking and reading assessment literature in order to find different tools for assessment strategies [21]. Hence, this research intends to provide new knowledge and a new ability to help social workers assess children between five to twelve years old.

Because this research provides new knowledge to help social workers assess children between five to twelve years old, it will introduce social workers to an assessment aid that is considered easy to use, non-threatening, simple, easy, and without a cultural barrier [22]. With so many different professions (e.g., occupational therapy, art therapy, psychiatric, and education) using origami to evaluate traits such as impulsivity, fine motor, memory, perception, and other, this research will also highlight similar findings to the origami-assessment-based research in other fields. Additionally, social workers interested in other ways to understand children will also benefit from this research.

The purpose of this study is to describe the benefits of origami use as a tool to assess school-age children, specifically for social workers [23, 24]. The research question is: How can social workers benefit from origami as an assessment tool among five to twelve-year-old children.

Literature Review

Origami

Origami or paper crane is a type of Japanese art that consists of folding paper in half, third or smaller size, creating a valued object [25]. Although the Chinese invented paper around 105 A.D., it was not until the 6th century that papermaking arrived in Japan, and the art of origami began. According to the legend, Don-Cho, a Korean Buddhist monk, taught the Japanese how to create paper when he visited the Imperial Palace around the year 610. The Japanese word "Oru" means folding, and the Japanese word "kami" states for paper [26,27].

Originally, paper was very costly, and only the wealthy had access to it. Origami was created for ceremonies such as weddings, in which origami butterflies represented the bride and the groom. The Samurai warriors also made origami designs that represented good luck symbols [28,29]. With time, paper became more accessible, and more people began creating origami. It is believed that this form of art passed from generation to generation, through mothers teaching it to their daughters. During the Edo period (1603-1868), there was a massive production of paper, making origami more accessible to the people. Some books were also published at this time, explaining how to create origami dolls and paper cranes [30].

Additionally, origami began to be taught in kindergarten and elementary school during the Meiji period (1868-1912) in Japan, increasing its popularity. Nowadays, origami is created and enjoyed by people all around the world. The first Origami center in the United States was created in 1958, Becoming later Origami USA. Additionally, people celebrate World

Origami Day each year from October 24–November 11, and it is part of a must-see showcase at the American Museum of Natural History in New York City, where the Origami Holiday Tree, decorated with 1,000 origami models, is displayed every December [31,32].

Benefits of Origami

According to Smith, origami is an activity that encourages freedom of expression among individuals. It is simple, clean, and easy to manage. The use of Origami has been studied among different fields due to its multiple benefits for the human brain and body. Individuals of all ages can do origami, from young children (kindergarten) to older adults, since it is easily adapted according to the developmental stage and needs of the individual. In the same manner, Kobayashi stressed those children as young as three years old can do origami [33].

State that origami is beneficial at a neuronal level; it benefits the brain. They found that doing origami activities correlates to good bimanual coordination, one of the good interhemispheric interaction attributes. While doing origami, the left hemisphere functions become active: right-hand control, written and spoken language, numerical skills, reasoning, scientific skills [34,35]. At the same time, the following right hemisphere's function became active: left- hand control, insight, imagination, and music and art awareness. Consequently, showing that

Origami activities stimulate interaction between the two sides of the brain and help develop verbal and nonverbal intelligence among children. In the same manner, Gakken Institute states that folding origami has a high activation of the brain, even higher than doing puzzles or playing chess. Varsha, as cited in, expresses that origami helps develop and improve the following skills among children and adults: increase concentration and logic among children and helps adults to fight stress and hypertension [36,37]. Additionally, origami improves visual sequential memory, eye-hand coordination, spatial ability perception, cognitive skills, patience, perseverance, concentration, attention, and additionally, research has shown that creating origami has a positive effect on

children with disabilities and special needs. For example, it improves attention span and concentration for those with attention deficit disorder [38].

Origami also enhances finger and hand strength and fine motor skills among children with physical and health disabilities. Among the population with autism, origami facilitates logic and step structure. Origami also improves cognitive processing, memory and organization skills among those children with traumatic brain injuries and intellectual disabilities, increase spatial reasoning for individuals with visual impairments, and provides soothing, self-relief of anger for children with emotional behavior disorder and facilitates attention, language development and articulation among children with speech delays. Origami has also been a useful tool in education among different population. For example, it helps deaf students to learn mathematics since they need to feel and see to learn [39].

Origami as an assessment and therapy tool

Origami has been used as an assessment and therapy tool by different professionals such as occupational therapists, speech therapists, art therapists, psychologists, and psychiatric and social. Toshiko Kobayashi, the founder of the Origami Therapy Association (OTA) and the Community of Japanese Creative Arts Therapists (CJCAT), creator of the theory of Expressive Origami Therapy (EOT), states that origami is "a universal tool of therapy". [40] Claims that origami is a safe, clean, simple, and easy to manage activity to use in therapy.

It is not expensive, it is not complicated, it does not have a cultural barrier so individuals can communicate using it beyond language limitation, its non-threatening, there are no IQ requirements and creates a pleasant atmosphere affirms that origami sessions have therapeutic value because there are a non-threatening approach that provides psychological support (e.g., promotes feelings of acceptance and connection, while at the same time confirms the clinician's availability for the client); encourages desired behavior (e.g., promotes activity, creativity, express feelings, and emotions, and uses a problem-solving approach), facilitates learning, problem-

solving, and communication experience while at the same time provides a setting for fun, relaxation, feedback, and positive reinforcement [41,42].

Levinson (n.d.) adds to the origami's therapeutic values of positive social interaction and feelings of achievement and well-being. Finally, origami can be used as an icebreaker. In the same manner, a social worker from the Netherlands, states, "I'm convinced that you cannot only use paper-folding in any therapy you like but also that Origami sometimes IS therapy" [43,44].

According to the American Art Therapy Association, origami can have many uses, especially as a play therapy tool for children who have experienced trauma. Kobayashi has an origami assessment tool and Kobayashi also uses "MY House Origami Assessment" and "Enrichment Origami Art Therapy Process/Product Assessment Form" while running groups at the Art Therapy NYU.

As Kobayashi mentioned, origami works as a mediator where the child's ego becomes steady, and it motivates him/her to express themselves (behaviorally, verbally, and creatively), it helps the child feel under control, to follow the instructions in a passive mode, and finally to feel accomplished (2007). Additionally, origami can rebuild positive relationships, aid children to process unspoken anxiety related to trauma, rebuild trust, and reconcile thought creativity [45]. Literature also correlates anxiety relief and the making of origami among hospitalized children.

Origami can also be also used as an adjunctive tool during diagnostic interviews. Describe how origami can be used as a diagnostic tool among children, arguing that children's dimensions such as duplication, visual sequence memory, motor control, frustration, and attentiveness can be evaluated using origami. In the same manner, Gold emphasized that origami can be used to assess the child's frustration level, compulsively, attention-concentration span, organization, accuracy, patience, and creativity. Furthermore, explains how origami can give information about a child's situation [46].

For example, J is a five-year-old girl: J could not fold the boat. She crumpled the paper. I gave her another sheet of paper and showed the step once again. But she could not even make the first step [47]. Her hands and arms were too tense (she had a fist instead of an open hand). She cried: "I cannot do it; the paper does not listen to me." I rubbed her hands to make them warm and relaxed and said: "if you are kind to the paper, the paper will do what you want"... It took much time, many kind and encouraging words much rubs and much patience; we tried and tried to fold together and at last she folded the boat [48].

The author acknowledges how J's family situation was correlated to her behavior "when you observed someone while he is folding, you can see how he feels". J had one two-year-old brother who was in a therapeutic school. J was a consequence of rape, J's father raped J's mother; therefore, her mother did not want her. At that time, J's parents got divorced, mom remarried, and was expecting a baby [49].

Gives another example. K was an eight-year-old boy who was very interested in the activity; however, he did not want to fold the origami model. Mom claimed he could not do that because he could not learn very well "he goes to a special school". Eventually, mom agrees to give the child a chance to fold the origami frog with the author's help [50]. The boy folded it quietly and slowly until he completes it. Mom was speechless.

The author indicates that the boy could have been intimidated and scared to fold the origami frog because mom did not believe he could do it [51,52]. After his mom's agreement, his interest would motivate him to do it, and he succeeded. Mom's behavior was stopping him from trying the activity.

Social Work and Assessments

According to, assessment is the process of data collection in order to identify the client's strengths and problems. The National Association of Social Work (2019) defines social work as the practice of "helping people obtain tangible services; counseling and psychotherapy with individuals, families, and groups; helping communities or groups provide or improve social and health services; and participating in

legislative processes".

Additionally, the International Federations of Social Workers [IFSW] defines social work as: a practice-based profession and an academic discipline that promotes social change and development, social cohesion, and the empowerment and liberation of people [53]. Principles of social justice, human rights, collective responsibility, and respect for diversities are central to social work. Underpinned by theories of social work, social sciences, humanities, and indigenous knowledge, social work engages people and structures to address life challenges and enhance wellbeing. The above definition may be amplified at national and/or regional levels. Research shows that for every dollar that is spent on social work, there is a return of US $3 return on investment to the national economy [54].

Define social work as a distinctive profession since it emphasizes the person along with the environment, it is based on a strength's perspective, and it is grounded on its own Integrity and principals called the NASW Code of Ethics [55]. Additionally, to the NASW Code of Ethics, the social work profession also has the Council on Social Work Education [CSWE], where nine core competencies are specified for accredited Master of Social Work programs to prepare graduate students for practice by mastering these core competencies [56].

CSWE states the following:

Competency 7: Assess Individuals, Families, Groups, Organizations, and Communities. Social workers understand that assessment is an ongoing component of the dynamic and interactive process of social work practice. Social workers understand theories of human behavior and the social environment, and critically evaluate and apply this knowledge in the assessment of diverse clients and constituencies [57,58]. Social workers understand methods of assessment with diverse clients and constituencies to advance practice effectiveness. The assessment process and value the importance of inter- professional collaboration in this process. Social workers understand how their personal experiences and affective reactions may affect their assessment and decision-making.

Part of being a social worker is to assess children in order to provide them the right help they need. Some of this assessment includes clinical interview observational checklists, ages and stages questionnaires, and different batteries such as Battelle Developmental Inventory Assessment for Young Children.

Trauma screening tools such as Child-Completed Tool (Self-Report) just to name a few [59,60]. Quality assessment is critical because it points to the needs and what is important for the client. States that if social work is linked to justice, then the assessment is part of a political activity "if the social work professional takes seriously the mandate of working toward social and economic justice, assessment must also include honestly looking at issues around power, including systems and relationships". Therefore, this competency motivates social workers to continue looking and reading assessment literature in order to find different tools for assessment strategies [61].

Therefore, origami is an assessment tool that can give information about a child's situation in relation to power and different systems (e.g., family system, peers), making it applicable for statement of justice mentioned above [62].

School-age children

Origami is easily adapted according to the developmental stage and needs of the individual. Therefore, the ages chosen for this research study are known as 'school age.' Clarifies that in the United States, 'school-age' is defined as the period beginning at five or six and ending at 10 to 12 years old. In the same manner, the Child Development Institute (n.d.) and the Mount Sinai Hospital (n.d.) classifies 'school-age children' as individuals from six to twelve years old.

This literature review has covered the most crucial aspect of origami in relation to the assessment of children. It describes the origins, benefits, and how different professionals from other fields (e.g., play therapy, psychiatry, psychology, occupational therapy, and so on) have used origami as an assessment tool to evaluate different child's features such as behavior, skills, perception, memory, motor, emotional aspects, and more (most of them based on research) [63]. Additionally, the literature demonstrates how assessment is part of the social work field, and how origami can fulfill the need of social workers to assess children.

Research Methods and Data Analysis

Purpose of the study and Research Question

The purpose of this study is to describe the benefits of origami use as a tool to assess school-age children, specifically for social workers. The research question is: How can social workers benefit from origami as an assessment tool among five to twelve-year-old children?

Sampling Strategy

In comparison to other professions, it is uncommon for social workers to use origami as an assessment aid for children; therefore, this study will use two non-probability sampling strategies: purposive or judgmental and snowball sampling. Padgett defines purposive sampling as a process of selecting individuals based on their ability to provide the information needed; therefore, this type of sample's goal is to provide conceptual and theoretical reasons, not to represent a large group of people (2008). Hence, individuals will be selected based on their profession (individuals with a Master in Social Work), working population (children), and their use of origami as an assessment aid [64].

In order to raise the likelihood of having a larger sample, snowball sampling was used. Snowball sampling is used for difficult to locate populations; when members are not likely to be found easily, and for this study, it is uncommon for social workers to use origami as an assessment aid for children.

Individuals will be selected based on their profession (individuals with a Master in Social Work), working population (children), and their use of origami as an assessment aid. In order to raise the likelihood of having a larger sample, snowball sampling was used. Snowball sampling is used for difficult to locate populations; when members are not likely to be found easily, and for this study, it is uncommon for social workers to use origami as an assessment aid for children [65].

Instruments

Due to the difficulty of finding the population being studied, this study used a mostly qualitative survey, defined by Jansen as "the study of diversity (not distribution) in a population" (2010, p.3). Internet surveys have opened new possibilities to researchers, now making it possible to reach participants who otherwise would have been inaccessible [66].

Miller & Slater (2000) state that some benefits of online surveys are linked to its accessibility. For example, online surveys are not scheduled, meaning that the participant can do it from anywhere (including in the comfort of their home or another safe place) anytime. Research has shown that online surveys provide a credible sample, the data is already in type form, and the participants feel more in control. An open-ended questionnaire was created using Thomas's and Olson's guides for asking questions [67].

Procedures

This is a case study because it focuses on a specific group social workers using origami as an assessment tool among school-age children. The participants were reached using different platforms; one of them was email. First, an account was created in www.surveymonkey.com. The survey had six questions

(Figure 1) and displayed the informed consent [68, 69]. The survey maintained confidentiality. It was sent to possible participants on January 2020. The survey ended on February 11th, 2020. Second, the researcher used the Google platform to find potential participants for the survey. Words such as "origami therapy social work," "LMSW origami," "LCSW origami" were typed on Google's research in order to find social workers who use origami in their practice [70].

Completion of this survey is voluntary. There are only 6 questions. It will not take longer than 5 minutes to complete. The topic is related to the use of origami as an assessment aid for school-age children.

1. Select profession/ credentials

☐ LMSW ☐ LSCW ☐ MSW ☐ other _____

2. Assessment is defined as the process of data collection in order to identify a client's strengths and problems (Jordan, 2013). Origami is a type of Japanese art that consist of folding paper in halves, thirds, or smaller sizes, creating a valued object (Hook & Paul, 2013; Lang, 1996; Sugii & Liu, 2018).

    a. Based on these definitions, do you use origami as an aid to assess school school-age children?

    ☐ yes ☐ no

3. Can you name and describe three or more reasons why you use origami as an assessment tool?

4. Do you think using origami as an assessment tool among school-age children has a benefit? Please explain.

5. Name three or more elements that can be assessed using origami on children. Please elaborate.

6. Do you think it's important for other social l works to use origami as an assessment tool for school-age children? Why or why not?

When you are done, please click SUBMIT button.

Thank you for your participation!

Francisco Asez-Moronta

Figure 1: Completion of this survey is voluntary. There are only 6 questions. It will not take longer than 5 minutes to complete. The topic is related to the use of origami as an assessment aid for school- age children.

After finding their information, participants were contacted by email. Each email had a brief introduction, the purpose of the email, the informed consent, and the link to the survey (Figure 2). It is important to note that the informed consent was also displayed on SurveyMonkey.com before the survey started. Simultaneously, the research worker contacted Toshiko Kobayashi, who is the creator of Expressive Origami Therapy (EOT), Enrichment Origami Art Therapy, and founder of Origami Therapy Association in New York City, and Shuei Kozu who is an assistant professor at Southern Connecticut State University and a clinical social worker for

Informed Consent Document

Title of Study: Origami as a Tool for Social Workers to Assess School-age Children
Investigator: Francine Asez-Moronta

My name is Francine Asez-Moronta. I am currently enrolled in my last years of my Master's Degree in Social Work (MSW) at Southern Connecticut State University. This research project is part of the MSW program, and a requirement to graduate.

You are being asked to be a participant in a research study. You will be emailed a short survey with six questions that will have you reflect on your impressions of the origami use as an assessment tool for school-age children. It will not take longer than 15-20 minutes to complete. The topic is related to the use of origami as an assessment aid for school-age children. To decide whether or not you wish to be a part of this research, you should be aware of all aspects of the study, its purpose, the procedures to be used and any risks or benefits. This consent form provides you with detailed information about the research study. I will discuss any aspects of the study with you that you do not understand. Once you understand the study, you will be asked to sign this form.

Purpose:
The purpose of this study is to describe the benefits of origami use as a tool to assess school-age children, specifically for Social Workers.

Procedures:
If you decide to volunteer, you will be asked to complete an online survey, with six questions regarding the use of origami as an assessment tool among school-age children.

Risks and Inconvenience: It is possible that some of the questions in the interview may make you feel uncomfortable. Although this rarely happens, if you do feel uncomfortable you may: (1) choose not to answer certain items, (2) take a break and continue later, (3) choose to stop the process. If you wish, you can speak to me or someone else of your choosing about your feelings.

Benefits:
This study was not designed to benefit you directly; however, there is a possibility of experiencing some benefits from participating in research that could enhance our body of knowledge about origami, children, and assessment.

Participant's Initials ___
Participant's Initials ___

Voluntary participation:
Your participation in this research is entirely voluntary. You may refuse to participate in this research without any negative consequences for you. If you begin to participate in this research, you may at any time and for any reason, discontinue your participation without any negative consequences. Simply do not complete the survey.

Confidentiality:
All information obtained from you will be confidential. Your privacy will be protected always. You will not be identified individually in any way because of your participation in this research. The data collected however, may be used as part of publications and papers related to character strengths among young children.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to decide if you wish to participate. If you have further questions, you may contact Francine Asez-Moronta (904)434-5979. If you have questions regarding your rights as a research participant, you may contact the SCSU Institutional Review Board at (203)392-5243.

Thank you.

Investigator Signature: I have explained to _____ the purpose of this research, the procedures required, and the possible risks and benefits to the best of my ability. To the best of my knowledge, the information contained in this consent form is true and accurate.

_____ (Principal Investigator or Assignee Signature)
Date: _____

Participant Signature: I confirm that Francine Asez-Moronta has explained to me the purpose of this research, the study procedures that I will undergo, and the possible risks and discomforts as well as benefits that I may experience. I have read or have had read to me this consent form and I understand it. Therefore, I give my consent (or, for my child, ward etc. if appropriate) to be engaged as a participant in this research project.

_____ (Participant of Guardian or Legal Representative Signature)
Date: _____

Figure 2: The topic is related to the use of origami as an assessment aid for school-age children. To decide whether or not you wish to be a part of this research, you should be aware of all aspects of the study, its purpose, the procedures to be used and any risks or benefits. This consent form provides you with detailed information about the research study. I will discuss any aspects of the study with you that you do not understand. Once you understand the study, you will be asked if you wish to participate, if you do, you will be asked to sign this form. The purpose of this study is to describe the benefits of origami use as a tool to assess school-age children, specifically for Social Workers.

The department of neurology at the Boston Children's Hospital [72]. The researcher asked to be referred to additional social workers who use origami as an assessment aid among school-age children (Figure 3).
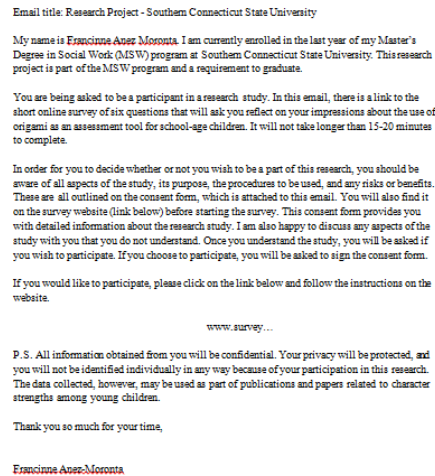
Figure 3: You are being asked to be a participant in a research study. In this email, there is a link to the short online survey of six questions that will ask you reflect on your impressions about the use of origami as an assessment tool for school-age children. It will not take longer than 15-20 minutes to complete.

Additionally, a flier (Figure 4) was created to notify potential participants about the study and who to contact if interested. This flier was posted in an "all members forum" under the "MyNASW Community," from NASW, with the title, "Origami as a tool for social workers to assess and school-age children." As with the email, there was a brief introduction and purpose of the study.

Figure 4: Origami as a tool for social workers to assess and school-age children." As with the email, there was a brief introduction and purpose of the study.

Protection of Human Services

This study respected and protected participants' confidentiality, guided by Southern Connecticut University's institutional review board's standards in addition to the criterion of the NIH Office of Extramural Research (2019) (Figure 5) and the Cooperative Institutional Training Initiative Program (CITI) (2019). Participation was voluntary, and each

participant received an informed consent (attached to the initial email and the online survey), which explained the research and informed the individual about the study.

Figure 5: This study respected and protected participants' confidentiality, guided by Southern Connecticut University's (2019) institutional review board's standards in addition to the criterion of the NIH Office of Extramural Research.

The participant had the right to refuse to participate or to end participation at any time. Harm to participants (e.g., physical or psychological) was minimized by providing them with anonymity and confidentiality. The researcher who has access to the survey identified each subject with a letter [73,74]. These actions are in

accordance with the confidentiality practices of properly disposing of data, limiting access to data, and storing research. Records in secure databases or cabinets. The platform that was used to collect data was Survey Monkey, which encrypts the data in transit using secure TLS cryptographic protocols, making the data secure. The data was saved in PDF format in the researcher's password-protected computer. It was printed using the researcher's printer. Printed data and transcripts were securely placed in a locked file to which the researcher only has access [75].

Figure 6: The Cooperative Institutional Training Initiative Program (CITI).

Rigor & Trustworthiness

According to Padgett (2008), the biggest threats to trustworthiness in qualitative research are reactivity, research biases, and respondent biases. Reactivity is defined as the potentially distorting effect of the researcher's presence on the participants' beliefs and behavior; however, since this study will utilize an online survey, the closeness of the qualitative research relationship will be minimized [76].

Research bias refers to when the interpretation of data is seen through the preconceptions and personal opinions of the researcher. It can be minimized when the researcher exercises self-awareness of her own conceptions and ideas related to the topic. This research was also read by professors and peers in Southern Connecticut State University's social work department.

Finally, respondent bias emerges when the respondent's subjectivity can sometimes be questioned. To minimize this, theory triangulation was used, which refers to the use of multiple theories and perspectives to interpret the data. Research and theories were used to understand the data [77].

Data Analysis

For this study, a qualitative case study strategy was chosen. states that a case study focuses on answering "how" and "why" questions; therefore, individuals' behaviors are not manipulated, contextual conditions are relevant to the study, and there might not be a clear boundary between phenomenon and context.

There were 27 (n=27) participants, 16 social workers (n=16), and 17 from other professions (family therapist, art therapist, educators, and occupational therapy). However, for the data analysis, only the answers from the social workers were considered. Among the social workers' group (n=16), there were five (n=5) Licensed Master Social Workers [LMSW], nine (n=9) Licensed Clinical Social Workers [LCSW], and two (n=2) Master Social Workers [MSW].

The answers from non-social worker participants were added as additional information in the discussion section since it was considered to have relevant information on using origami as a way to assess children from five to twelve years old [78].

In order to start the data analysis, the data needed to be transcribed on a computer; however, the data was already transcribed since the instrument was an online survey. Two hard copies were printed. One copy was stored in a file organizer to be used as a backup, and the other one was used to create codes and themes. The data analysis was completed based on Clarke and Braun's thematic analysis recommendations, which consists of the following six steps: familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, naming themes, and writing-up of themes. Codes are significant emergent ideas in relation to the research question leading the analysis. Codes were written in a memo, given the possibility for other researchers or auditors to review them (Padgett, 2008). Codes were obtained mostly from question #3 (*i.e.,* can you name and describe three or more reasons why you use it [origami]?), #4 (*i.e.,* do you think using origami as an assessment tool among school-age children (five to twelve years old) has a benefit? please explain), # 5 (*i.e.,* name three or more elements that can be assessed using origami on children. Please elaborate), and #6 (*i.e.,* Do you think it's important for other social works to use origami as an assessment tool for school-age children? Why or why not?). After creating the codes, the following step is to search and create themes. Themes are patterns in the data that are relevant to the research questions; in other words, codes that are similar or share characteristics (Braun & Clarke, 2006). Due to the survey's short answers, themes were constructed by collecting two or more codes that have the same blueprint [79, 80].

Findings and Limitations

Findings

Twelve codes and four themes were created to better help interpret the data.

Codes

In *Vivo* coding was used (Padgett, 2008) to create twelves codes: "fine motor skills," "general motor skills," "follow directions," "self-regulation/ability to regulate," "social skills," "creativity," "spatial awareness ability," "problem-solving," "concentration/attention," "self- esteem," "sounds interesting, need more information/ I would like to learn more" and "origami as an additional assessment tool that SW can use."

Code number one "fine motor skills" was created based on the following quotes "dexterity [reported twice]," "fine motor skills [reported five times]," and "finger dexterity."

Code number two "general motor skills" came from quotes "hand eye coordination," "motor skills [referred four times]," "hands on activity," "eye hand coordination," and "assess eye hand coordination."

Code number three "follow directions" originated from "follow multi-step directions," "ability to follow directions [reported four times]," "understanding of multi-step task," "ability to comprehend and follow directions" "used to assess ability to follow instructions," and "follow instructions."

Code number four, "self-regulation/ability to regulate" came from the quotes "frustration tolerance [reported three times]," "you can assess things like impulse control," "impulse control [reported two times]," "emotional regulation," "ability to self-regulate," 'anger management,"
"frustration," "patience [reported twice]," "relaxation tool," "this [origami] can be used to measures anxiety," and "self-regulation."

Code number five, "social skills" originated from "peer relationships/empathy," "social skills [reported twice]," "rapport building," "engages children right away," "asking for help," "engaged conversation from young children," "naturally help others," and "fun and engages children right away."

Code number six "creativity" came from the following quotes "I do feel that art in general is a very vital for of expression," "creativity [reported twice]" and "it's fun, creative."

Code number seven "spatial awareness ability" was created based on "it helps me to see if they understand the idea and logic," and "spatial awareness abilities."

Code number eight "problem solving" was based on the quotes "coping strategy," "preservative," "problem solving [reported twice]," "because you can assess things like...perseverance," and "solve problems."

Code number nine "concentration/attention" came from "assess attention deficit," "high engagement," "practice observation," "attention [reported three times]," "mental concentration," "ability to focus on a task," "focus and concentration," "concentration [reported twice]" and "it can be used to assess such as concentration."

Code ten "self-esteem" was created based on the quotes "a great tool to build confidence," "it provides instant satisfaction," and "self-esteem."

Code number eleven "sounds interesting, need more information/i would like to learn more" originated from "I am not sure how is origami used to assess strengths and problem, I would have to know more about how that is achieved," "I need more information about it [origami as a tool for assessment]," "I need more information." "I'm not sure what you are assessing, how is origami used to assess strengths and problems? I would have to know more about how that is achieved," "I would need to know more about the assessment details, how?" and "need more details."

Code number twelve "origami as an additional assessment tool that SW can use" originated from "It[origami] is one of the tools to be used," "I think it's [origami] an additional tool that SW could use... we can find many aspects of the individual using origami," "it would be useful for certain kids who are engaged," "it is [origami] a game for the child, the child feels that he is playing with you and that you are not evaluating him," "I use origami with adult clients to reduce symptoms of anxiety and as a tool for mindfulness.. it is also a great tool to build confidence," "sure [for you think is important to use origami as an assessment tool]," "possibly [[for you think is important to use origami as an assessment tool] and "yes [for you think is important to use origami as an assessment tool]."

Themes

Four themes were created; these were cognition, motor skills, social and emotional abilities, and social work response [81].

Theme number #1 "cognition," corresponds to the codes "problem solving," "concentration/attention," "special awareness ability," "follow directions." Theme number #2 "motor skills" constitute the codes "fine motor skills" and "general motor skills." For theme number #3 "social and emotional abilities," the codes "self-regulation/ability to regulate," "social skills," and "self-esteem" were used. Finally, theme #4 "social worker's responses" were constituted with the codes "sounds interesting, need more information/ I would like to learn more" and "origami as an additional assessment tool that SW can use."

Limitation of the study

There are some limitations to this study. First, the data gathering tool was an online survey that can limit some social workers from completing it (e.g., the email went to the spam folder, lack of computer skills). Second, the sampling strategies (e.g., purposive or judgmental and snowball) can be a limitation due to the number of participants that can be reached. Another limitation was that some social workers skip some questions; therefore, some surveys were not fully completed. Fourth, the fact that the survey was opened for just one month due to the timeline could have left behind some possible participants that knew about the service after it was closed [82,83].

Finally, the study has a small sample, which means the results cannot be generalized to the whole population. Despite these limitations, this study has some important implications. This study contributes to the social workers' knowledge about using origami as an assessment tool for children from five years to twelve years of age.

Discussion

Findings show a correlation with previous literature. First, there was consistency among the literature that demonstrated how origami can help to determine several children's abilities. Findings stating that origami can be used to assess the child's motor skills (theme two), problem solving (code eight), and concentration/attention (code nine) can be related to article, where they argue how origami can be used as a diagnostic tool among children's dimensions such as duplication, visual sequence memory, motor control, frustration, and attentiveness, and all of these can be evaluated using origami.

Additionally, origami can be helpful in assessing social and emotional abilities (theme three), specifically social skills (code five). For example "peer relationship" (participant #10), and "asking for help" (participant #23), can be related to the studies. States that origami is an assessment tool that can give information about a child's situation in relation to power and different systems (e.g., family system and peers) and has therapeutic values for positive social interaction Levinson (n.d.). In the same manner, affirms that origami promotes feelings of acceptance and connection [84,85].

Additionally, origami can be helpful in assessing social and emotional abilities (theme three), specifically social skills (code five). For example "peer relationship" (participant

#10), and "asking for help" (participant #23), can be related to the studies. States that origami is an assessment tool that can give information about a child's situation in relation to power and different systems (e.g., family system and peers) and has therapeutic values for positive social interaction Levinson. In the same manner, affirms that origami promotes feelings of acceptance and connection.

Furthermore, this research shows that a number of social workers are using origami as an assessment tool, "it is one of the tools I use" "I think it's [origami] an additional tool that SW could use… we can find many aspects of the individual using origami" (participant #16), while others do not use it due to a lack of information about this topic "need more information" (participant 9). These responses could be related to the fact that there is little research on origami as an assessment tool especially within the social work field.

Therefore, there is a need for future research to go deeper in order to expand on how origami can be beneficial to assess children and how social workers can implement it in their sessions. Additionally, future questions need to explore the relationship between origami and the therapist who will use origami as a tool (*i.e.,* does the therapist knows how to do origami?), as well as incorporating quantitative research with control groups into the research.

Other mental health professionals

Seventeen of the survey responders were professionals from other fields such as Creative Art Therapists [LCAT], Family therapists [LMFT], and Educators. The answers are added here as additional information since it is considered to have relevant information on using origami as a way to assess children from five to twelve years old [86].

All non-social worker professionals (n=16) who answered the survey used origami as an assessment tool. They stated that it is used to "observed frustration tolerance when unable to achieve the desire goal," ability to follow directions, fine motor (Art Therapist), as well as memory, perseverance, hand eye coordination "just observing a child folding paper you can assess their dexterity, ability to grasp, spatial relations, hand eye coordination" (Educators). These answers are related to what social workers who use origami as an assessment tool answered in the survey, as well as previous literature about the benefit of using origami as a tool.

Conclusion

As previously mentioned, there is a vast literature within the field of psychology, occupational therapy, psychiatry, art therapy, nursing, and education that uses origami as a tool to assess children in different areas such as visual sequence memory, motor control, frustration, attentiveness, compulsivity, attention-concentration span, organization, accuracy, creativity and the child's current situation. However, little research using origami as an assessment tool exists within the social work field.

Creating a gap in which social workers are not utilizing this tool that other mental health professionals are benefiting from. Therefore, this research contributes to the use of origami as an assessment tool, especially within the field of social work.

As cited previously, and state that assessment is crucial for social workers because services, treatment, and help will depend on it. In fact, it is so important that "assess Individuals, Families, Groups, Organizations, and Communities" is competency number severing under the NASW Code of Ethics;. Findings from this study show that social workers can use origami to determine aspects such as fine motor skills, general motor skills, follow directions, self-regulation/ability to regulate, social skills, creativity, spatial awareness ability, problem solving, concentration/attention, and self-esteem in children.

Origami can help social workers observe and

determine a child's ability by using a tool that "it is a game for the child" (participant 24), "engaged conversation from young children" (participant #17), "it's fun and creative" (participant #11) "fun and engages children right away" (participant #20). These statements, related to code number six, theme "origami as an additional assessment tool that SW can use" correlates with Andressa's statement origami creates a pleasant atmosphere and claim that origami as an assessment tool provides a setting for fun, relaxation, feedback, and positive reinforcement. This thesis study is published in ProQuest. Findings were shown at different conferences such as the Symposium 2020 Networking Night by NASW Massachusetts chapter.

Dedication

To my dearest and beloved parents, William Añez Nava and Nirza Moronta de Añez, who always had unfailing love, support, and guidance through my academic years. Thank you for believing in me. To my dearest and beloved sister, Maria Teresa Añez Moronta. You have been my role model since I was a child. Thank you for everything you had done for me. Finally, I must express my very profound gratitude to the Lord Jesus Christ, who, without him, any of this would have been made possible.

Acknowledgment

References

1. Yenn T. Origami and sanity. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91). UK: British Origami Society. 2016; 314-342.
2. Jordan C. Assessment. 2013.
3. Clemons JW. Client system assessment tool for social work practice. Paper presented at the North America Association of Christians in Social Work Convention (NACSW) 2014. Annapolis, Maryland: NACSW. 2014.
4. Council on Social Work Education. Educational policy and accreditation standards for baccalaureate and master's social work programs. 2015.
5. Kobayashi T. The art of origami: An art therapist explains its history and use in trauma work. 2019.
6. Radcliffe G. Origami and therapy. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91). UK: British Origami Society. 2016; 296-298.
7. Kanazawa T. Origami brings relaxation and fun to the sick and healthy of all ages. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91). 2016; 387-390.
8. Motaweh DEM, Fukuyama HM, & Issa ANA. Effectiveness of the proposed training program on attention and working memory for children with special needs in Saudi Arabia. Life Science Journal. 2014; 11(8): 461-474.
9. Gold S. Origami as a therapeutic tool. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy. 2016; 383-385.
10. Ho, G. Therapeutic value. 1993.
11. Kobayashi T. Use of origami for children with traumatic experiences. In S. L. Brook (Ed.), The use of the creative therapies with sexual abuse survivors. Springfield: Charles C Thomas Publisher. 2007; 102-119.

12. Andreass B. Origami art as a means of facilitating learning. Procedia Social and Behavioral Science. 2011; 11: 32-36.

13. Harris J, Newcombe NS & Hirsh PK. A new twist on studying the development of dynamic spatial transformations: mental paper folding in young children. Mind, Brain & Education. 2013; 7(1): 49–55.

14. Jamil SESA, Ibrahim NH, Samsuddin I & Baharom MK. A study on the enfolded technique of origami art sensible among five-year-old children in Perak, Malaysia. International Journal of Advances and Applied Sciences. 2019; 6(6): 1-5.

15. Kanazawa T. Origami brings relaxation and fun to the sick and healthy of all ages. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91). 2016; 387-390.

16. Hershenson J & Isaacson R. Asian American life. [Television series]. New York, NY: Cuny TV. 2015.

17. Anderson DL, August GJ, Bloomquist ML, Brombach AM & Share SS. Maternal facilitation of children's problem solving: Relation to disruptive child behavior and mental characteristics. Journal of Clinical Child Psychology. 1996; 25(3): 308-316.

18. Chen, K. Math in motion: Origami math for students who are deaf and hard of hearing. Journal of Deaf Studies and Deaf Education. 2005; 11(2): 262-266.

19. Duncombe LW, Henry AD & Nelson DL. Choice making in group and individual activity. The American Journal of Occupational Therapy. 1984; 38: 245-251.

20. Levinson BM. Paper folding as a therapeutic device. Perceptual and Motor Skills. 1976; 43: 494.

21. Pomeron-Arbues C. Paperfolding: An art in your hands: The possibilities of its use and "back-up" therapy. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91) UK: British Origami Society. 2016; 407-415.

22. Shumakov K & Shumakov Y. The folding: A method of bilateral development: Based on the art of origami. 2001.

23. Zanelli CM. Origami as occupational therapy of hospitalized children. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91). UK: British Origami Society. 2016; 303-305.

24. Motaweh DEM, Fukuyama HM, & Issa ANA. Effectiveness of the proposed training program on attention and working memory for children with special needs in Saudi Arabia. Life Science Journal, 2014; 11(8): 461-474.

25. Tsuboi M. Origami has big benefits. Ottawa: Ottawa University Student Media. 2007.

26. Saleebey D. The strengths perspective in social work practice. Upper Saddle River, N.J: Pearson Education, Inc. 2013.

27. Hook N & Paul K. Beyond the fold: The math, history, and technology behind origami. Ohio Journal of School Mathematics. 2013; 67: 21-26.

28. Lang RJ. A computational algorithm for origami design. Symposium on Computational Geometry, 1996; 98-105.

29. Rosli R & Lin TW. Children early mathematics development based on a free play activity. Creative Education. 2018; 9(7): 1174-1185.

30. Graham K. How the invention of paper changed our world. 2017.

31. Silk Road. (n.d.) Chinese paper making.

32. Kowalski KM. Origami: an ancient art. Appleseeds. 2006; 8(5): 28-29.

33. Kobayashi MC & Yamada UTR. Origami and kirigami: Art and culture as a recreational and educational resource. Revista Ciência em Extensão, 2013; 9(3): 148-158.

34. Web-Japan. History. 2019.

35. Temko F. Paper pandas and jumping frogs. San Francisco: China books. 1986.

36. American Museum of Natural History. The making of the origami holiday tree.

37. Lipnick R. Origami: Artful interventions for a variety of settings and conditions. Occupational Therapy Practice. 2012; 17(22): 16-18.

38. Ono M & Ono T. Therapeutic origami.

39. Krisztián Á, Bernáth L, Gombos H & Vereczkei L. Developing numerical ability in children with mathematical difficulties using

origami. Perceptual and Motor Skills. 2015; 121(1): 233-243.

40. Taylor HA & Hutton A. Think 3d!: Training spatial thinking fundamental to STEM education. Cognition and Instruction. 2013; 31(4): 434–455.

41. Sze S. Effects of origami construction on children with disabilities. 2005b.

42. Sze S. Get ahead, get technology: A new idea for rural school success. Proceeding of the American Council on Rural Special Education. 2004; 24, 118-121.

43. Mehlomakulu C. Origami in therapy. 2012.

44. Sze S. Effects of origami construction on children with disabilities. 2005b.

45. Gardner H. Multiple intelligences: The theory in practice. NY: Basic Books. 1993.

46. Robinson N. Thoughts on origami and therapy. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91) UK: British Origami Society. 2016; 416-439.

47. Rogers CR. Freedom to Learn. Columbus, OH: Merrill. 1969.

48. Swanson HL. Instructional components that predicts treament outcomes combined strategy and direct instruction model. Learning Disabilities Research & Practice. 1999; 14(3): 129-141.

49. Arief YS, Binarwati D & Ismiwiranti R. Playing origami enhance the creativity of school age children [Abstract]. Jurnal Ners. 2008; 3(1): 42-48.

50. Massara K. The modern life of origami, an art as old as paper. The New York Times. 2019.

51. American Therapy Association. The art of origami: An art therapist explains its history and use in trauma work. 2019.

52. Van der Ploeg E. Origami and therapy … Origami in therapy…?. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy (COET '91). UK: British Origami Society. 2016; 303-305.

53. Group of Clinical Origami. Minutes of clinical origami. Blogger, 2007.

54. Akthar Z & Lovell A. Art therapy with refugee children: A qualitative study explored through the lens of art therapists and their experiences. International Journal of Art Therapy. 2019; 24(3): 139-148.

55. Edwards C & Hegerty S. Where it's cool to be kitty: An art therapy group for young people with mental health issues using origami and mindfulness. Social Work with Groups. 2016; 41(1-2): 151-164.

56. Mathew CS & Christabel D. Effectiveness of origami on hospitalized anxiety among children. International Journal of Advance Research and Development. 2018; 3(8): 169-173.

57. Jones L. Responding to the needs of children in crisis. Int Rev Psychiatry. 2008; 20(3): 291-303.

58. Brown MB & Loomis M. Origami as a diagnostic test. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education and Therapy. 2016; 264-265.

59. Krooshoop J. Origami experience. In J. Smith (Ed.), Origami in education and therapy: Proceedings of the first International Conference on Origami in Education. UK: British Origami Society. 2016; 393-402.

60. Suppes M & Wells C. The social work experience: An introduction to social work and social welfare. Boston: Pearson Education, Inc. 2013.

61. Framingham J. Types of psychological testing. 2018.

62. Social Workers Tool Box. Assessment: Children.

63. Logsdon A. Battelle developmental inventory assessment for young children. 2019.

64. Padgett DK. Qualitative methods in social work research. Thousand Oaks, California: Sage Publications, Inc. 2008.

65. Miller D & Slater D. The internet: An ethnographic approach. New York: Berg 2000.

66. McCoyd JL & Kerson TS. Conducting intensive interviews *via* email: A serendipitous comparative opportunity. Qualitative Social Work. 2006; 5(3): 389-406.

67. Thomas SJ. Designing surveys that work! A step by step guide. Thousand Oaks, CA: Corwin Press Inc. 1992.

68. Olson K. Essentials of qualitative interviewing. Walnut Creek, CA: Left Coast Press. 2011; 112.

69. Rubin A & Babbie ER. Essential research methods for social work (4th ed.). Boston, MA: Cengage Learning. 2016.

70. Southern Connecticut State University. Institutional review board (IRB). 2019.

71. NIH Office of Extramural Research. Protecting human research participants. 2019.

72. SurveyMonkey. Security statement. 2018.

73. Yin RK. Case study research: Design and methods (3rd ed.) Thousand Oaks, CA: Sage Publications Inc. 2003; 5(5).

74. Clarke V & Braun V. Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. The Psychologist. 2013; 26(2), 120-123.

75. Braun V & Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006; 3: 77-101.

76. International Federation of Social Workers. What is social work? 2019.

77. Cooperative Institutional Training Initiative Program (CITI). Social & behavioral research - basic/refresher. 2019.

78. International Federation of Social Workers. Global definition of social work. 2014.

79. Jansen H. The logic of qualitative survey research and its position in the field of social research methods. Forum Qualitative Sozialforschung/Forum: Qualitative Social Research: 2010; 11(2): 1-21.

80. National Association of Social Workers. Practice. 2019.

81. Origami USA. World origami days. 2019.

82. Shumakova K & Shumakov Y. Functional interhemispheric asymmetry of the brain in dynamics of bimanual activity in children 7-11 years old during origami training (Doctoral dissertation). The Rostov State University: Russia. 2000.

83. Yuzawa M & Bart WM. Young children's learning of size comparison strategies: Effect of origami exercises. Journal of Genetic Psychology. 2002; 163(4): 459.

84. Maternal facilitation of children's problem solving: Relation to disruptive child behavior and mental characteristics. Journal of Clinical Child Psychology. 25: 308-316.

85. Cooperative Institutional Training Initiative Program (CITI. Social & behavioral research - basic/refresher. 2019.

86. National Child Traumatic Stress Network (nd). Trauma screening.

Correspondence author: *Francinne Anez-Moronta, Southern Connecticut State University, New Haven, United States*

Email: anezfrancinne@gmail.com