

Occupational Therapy Practitioner Interventions for Individuals with Hoarding Tendencies: A Descriptive and Associational Survey

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Abstract: Hoarding Disorder is a condition often referred to occupational therapy for comprehensive assessment and intervention, however the strategies that occupational therapy professionals use in the clinical management of hoarding behaviors is poorly understood. The purpose of this mixed methods survey design research was to collect and analyze information on the beliefs, attitudes, and perceptions of common and effective intervention techniques currently used among occupational therapy professionals to address hoarding behaviors. A total of 18 ($n = 18$) responding occupational therapy professionals met inclusion criteria. Occupational therapy professionals universally indicated that environmental modification strategies were utilized as an intervention to manage hoarding behaviors, and the majority of participants also indicated the use of ADL training, IADL training, household mobility training, occupation-based therapeutic activity, personal safety training and self-management training as interventions for Hoarding Disorder. Regression analysis between the perceived effectiveness of a given intervention and the reported frequency of how often the intervention was used indicated that occupational therapy professionals found that the following interventions were generally most effective for the management of Hoarding Disorder: environmental modification, $rs(18) = .550, p = .018$, VS-MPR = 5.09; personal safety training, $rs(18) = .543, p = .020$, VS-MPR = 4.70; creative expression activities, $rs(18) = .624, p = .006$, VS-MPR = 11.98; ADL training, $rs(18) = .412, p = .066$, VS-MPR = 2.05; self management training, $rs(18) = .443, p = .075$, VS-MPR = 1.89; and occupation-based therapeutic activities, $rs(18) = .444, p = .063$, VS-MPR = 2.11. The results of this study affirm that occupational therapy professionals generally find complex systems of techniques as more effective than single techniques for treating those with hoarding disorders, however further research is needed to better understand which occupational therapy assessments and interventions work well together as effective treatment systems.

Keywords: Occupational Therapy, Hoarding Disorder, Intervention, Assessment, PEO, Applied Psychology

1. Introduction

1.1. Hoarding Disorder and Occupational Therapy

Hoarding is the compulsion to save or collect a variety of otherwise seemingly useless or unnecessary items with the inability to relinquish them without difficulty [1]. Many times, hoarders - a colloquialism for those who hoard - are often faced with deleterious emotions, social stigmas,

physical limitations, financial burdens, and even legal difficulties regarding issues with hoarding on their properties [2]. It is crucial to address hoarding in the environment of the individual; occupational factors also affect their functional mobility, safety, and independence within their homes. Home health experts felt like they should intervene with hoarding behaviors as it fell within the occupational therapy (OT) scope of practice, but could not due to feeling unsure where to begin addressing the hoarding problem [3]. Occupational

justice supports the need for occupational therapy practitioners (OTPs) to have a role in hoarding by the definition of full inclusion from an ethical standpoint to help our clients wholly [4].

The Occupational Therapy Practice Framework, 4th edition (OTPF-4) defines OT as “the therapeutic use of everyday life occupations with persons, groups, or populations to enhance or enable participation” [5]. OT can help with hoarding behaviors by considering hoarding as a type of occupation that an individual engages in. Hoarding Disorder can also result in a decrease in social and occupational functioning (Archer *et al.*, 2019). OTPs can promote activities of daily living (ADL) within an individual’s intervention session is functional mobility, which examines how an individual can move from one position to another within their environment [6]. Hoarding does not support the ability to move around the home environment, even more so if the individual requires mobility aids or relies on surfaces to move around [5].

Instrumental activities of daily living (IADLs) are an aspect of OT that focuses on assisting in independent and functional living. Hoarding specific examples of IADLs can include, but are not limited to, meal preparation, financial management, home management and mobility, cleanliness of self and home environment, fire and safety management, emergency planning, and developing skills related to adaptive equipment [7]. Providing client education and additional resources to individuals with hoarding tendencies is necessary, but there is difficulty in knowing when it is appropriate to ask for help as well as whom to ask for help [5].

Rachey and Janssen [8] state that a collaborative, client-centered approach is the most important feature in forming an intervention plan because it allows the client to have autonomy over the therapy session and allows them to engage in meaningful occupations. Allowing the client to choose the occupations they engage in helps to establish rapport with the OTP [9]. Thus, it is pertinent for OTPs to approach home management with caution and compassion due to the sensitive nature of the occupation. The most effective intervention method for individuals who hoard is not just one intervention technique, but a complex system of techniques [10]. Creative outlets tend to help the individual express feelings and work towards a healthy ego adaptation [11]. Many of these intervention techniques include writing expressive or open prompts, creative expression through drama or free-form art, support groups, and group therapy for working on feelings and appropriate reactions [12].

1.2. Psychology of Hoarding Disorder

Archer *et al.* [6] state that hoarding disorder has a large impact on public health and it is highly comorbid with other complex disorders. Before hoarding disorder was added to the Diagnostic and Statistical Manual-V (DSM-V), it was studied in the area of obsessive-compulsive disorder (OCD) or obsessive-compulsive personality disorder (OCPD) [13].

Psychiatric comorbidities varied widely which included major depressive disorder (MDD), social phobia, general anxiety disorder, dysthymia, eating disorders, substance abuse, post-traumatic stress disorder (PTSD), and suicidal ideation. The relationship between burden and the severity of hoarding contributes to hoarding-related functional impairment and the effects of these variables on social and occupational performance.

Hoarding is associated with individuals of low income, higher rates of poverty, as well as high unemployment rates [14]. These risk factors increase the rate of suicidality in many different populations, therefore these risk factors can contribute to suicidality for those with Hoarding Disorder [6]. Explicitly, individuals with a lower socioeconomic status were more likely to experience hoarding than those with a higher socioeconomic status. Samuels *et al.* [14] stated that the probability and prevalence of hoarding increased with the age of the individual. Those who lived alone experienced hoarding more than those who lived with another person and/or more people. Lastly, those who were unemployed experienced hoarding more so than those who were employed. Therefore, the prevalence of hoarding is inversely related to household income, living arrangements, and employment [14].

As individuals age, they are prone to hoarding and other comorbidities such as self-neglect and depression [14]. Rachey and Janssen [8] published an article that specifically addressed self-neglect, comorbidities, and hoarding behaviors in older adults. Older adults also experience higher rates of depression and dementia compared to other populations [8], a conclusion that is also supported by [15]. The authors emphasize that hoarding behaviors can be a byproduct of the depression and self-neglect that the older population experiences. Rachey and Janssen [8] also discuss how home establishment and maintenance regarding hoarding can be a sensitive subject for individuals in the geriatric population.

1.3. Theoretical Model

The theory used to conceptualize this study was the Person-Environment-Occupation Model (PEO). PEO fits the needs of this study well because it explains a person’s interaction within their environment, self, and important occupations, and conceptualizes dysfunction among these three domains [11]. When looking at the person, it is important to take into consideration one’s physical, cognitive, and effective components [16]. The environment includes all physical, social, cultural, and institutional elements that occupations take place in. Occupations are defined to include ADLs, any home, work, or community activity, recreation, and socialization. The occupation itself is communicated in three parts: activity, task, and occupation. An activity is the basic unit of a task and is usually composed of sets of purposeful activities. A task is considered to be the smallest conceptual component of an occupation. Occupations look at the sets of tasks that are most commonly associated with one’s social or work roles.

2. Methods

2.1. Purpose Statement & Research Questions

The purpose of this mixed methods survey design research was to collect and analyze information on the beliefs, attitudes, and perceptions of common and effective intervention techniques currently used among OTPs to address hoarding behaviors. The research questions associated with this study are:

RQ1: What attitudes, perceptions and beliefs do OTPs have regarding the clinical management of hoarding disorders?

RQ2: What clinical services do OTPs believe to be the most effective in the management of hoarding behaviors?

2.2. Procedures

The inclusion criteria of this study consisted of OTPs with experience in treating hoarding behaviors, with no exclusion criteria on practice setting or specialty. Other rehabilitation scientific professionals, such as physical therapists, physical therapy assistants, speech and language pathologists, rehabilitation nurses, and otherwise home health professionals will be excluded from this study, however.

The sampling method that was used to obtain participants was through purposive sampling. Participants were recruited for the study through flyers and recruitment emails, which detailed the purpose of the study, alongside inclusion criteria, exclusion criteria, expected time commitment, and contact information for the researchers. Recruitment consisted of emails that were disseminated to OTPs within the home health domain of practice as eight percent of practicing OTPs work within the home health practice area. Participants were recruited through the American Occupational Therapy Association (AOTA), Virginia Occupational Therapy Association (VOTA), and the Maryland Occupational Therapy Association (MOTA). Recruitment strategies also consisted of posts on the CommunOT message board, as well as social media groups including Facebook, Instagram, and Reddit.

A survey was created using the Google Forms platform to collect data on the beliefs, attitudes and perceptions of OTPs providing services to those with a hoarding condition; specifically, 52 questions in multiple choice, Likert scale and open ended formats regarding what OTPs observed in a variety of settings and what assessments they had used, and their perceived effectiveness of interventions when used with clients were provided in the survey. Further questions about additional clinical training, certifications, or continuing education pertaining to hoarding were also included in the survey. The beginning of the survey consisted of the informed consent and inclusion criteria screening questions.

Once the survey was closed, the data was downloaded into a spreadsheet, cleaned, and assigned a coded identifier. This study was reviewed and approved by the Shenandoah

University International Review Board (IRB) prior to the initiation of data collection.

2.3. Data Analysis

A frequency analysis was used to identify which interventions used to treat hoarding were utilized most often, alongside which interventions were deemed most effective by OTPs. For regression analysis, Kendall's tau-b tests were used to test for associations between ordinal and continuous variables, and Vovk-Sellke Maximum p Ratios (VS-MpR) were reported to provide Bayes Factor bounds for relevant analyses. All analyses were completed using the JASP statistical computing engine.

3. Results

A total of 20 participants responded to the survey, however, only 18 ($n = 18$) participants fit the inclusion criteria. All 18 of the eligible participants were licensed OTPs who stated that they have worked with patients who present with hoarding tendencies. The lengths of participant careers varied from under one year, up to 38 years. Represented settings included long-term care, home health, acute care, independent living facilities, telehealth, psychosocial practice, and the adult day care setting. There were 13 participants who stated that 0%-19% of their clients presented with hoarding tendencies. Four participants answered 20%-39%; one OTP reported 40%-59%. Four respondents (22.2%) identified they received additional training regarding the treatment of patients with hoarding tendencies, and all four responses were related to continuing education courses or programs that addressed hoarding.

3.1. RQ1: What Beliefs, Perceptions, and Attitudes Do OTPs Have Regarding the Management of Hoarding Behaviors

Figure 1 shows the various ways respondents reported using social participation with clients' families. Only one respondent reported not encouraging social participation among hoarding clients.

Figure 2 depicts the various education that was provided to clients by the OTPs. Similar to the social participation question, only one respondent reported that they did not provide their client with any education.

Figure 3 represents the responses to which topic of discussion seemed to be the most sensitive to the clients.

In Figure 4, participants reported the frequency in which they referred a client with hoarding tendencies to a psychotherapeutic practitioner for additional services.

Figure 5 shows the various resources used by the OTPs while developing intervention plans for their clients. The singular written response focused on utilizing an interprofessional team; this data was included as a vote for peer collaboration.

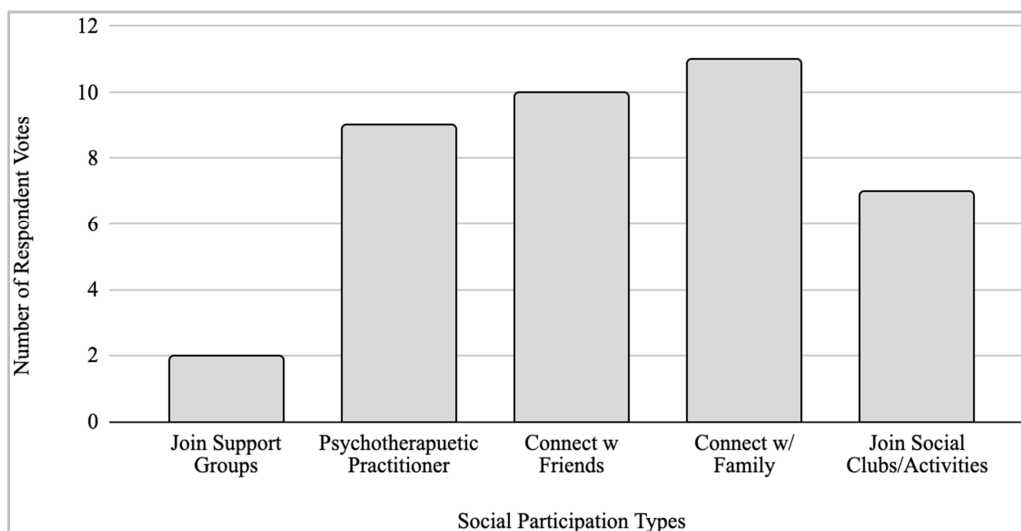


Figure 1. How OTPs Utilize Social Participation During Intervention With Their Clients.

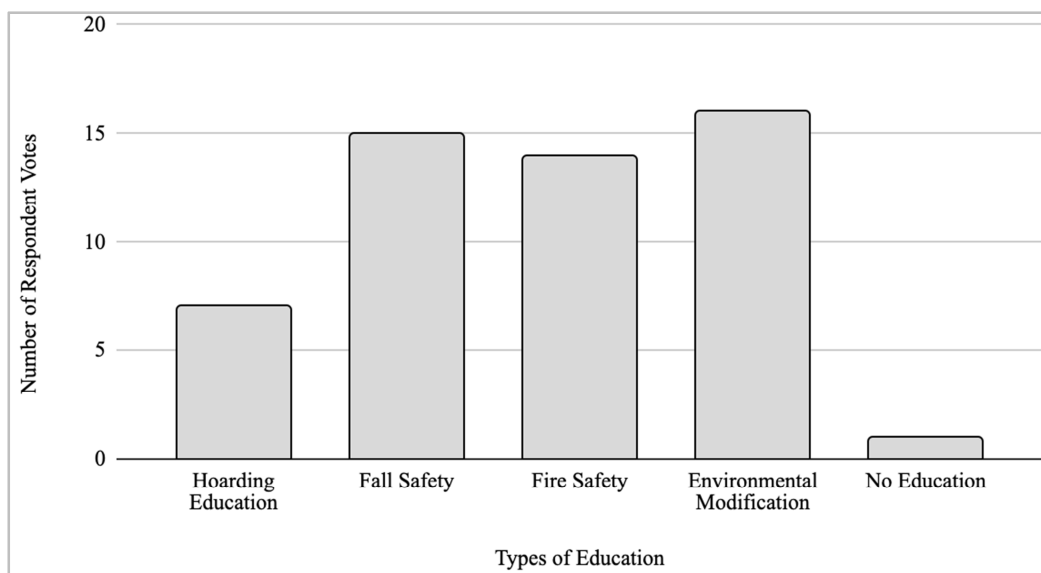


Figure 2. Types of Education OTPs Provide to Their Clients.

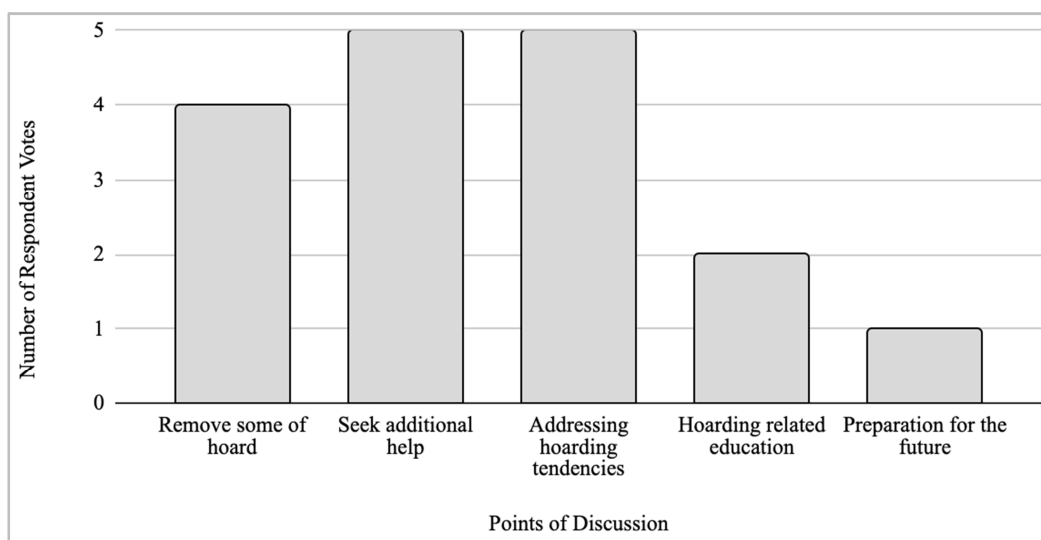


Figure 3. Points of Discussion that Seemed to be the Most Sensitive to the OTPs Clients.

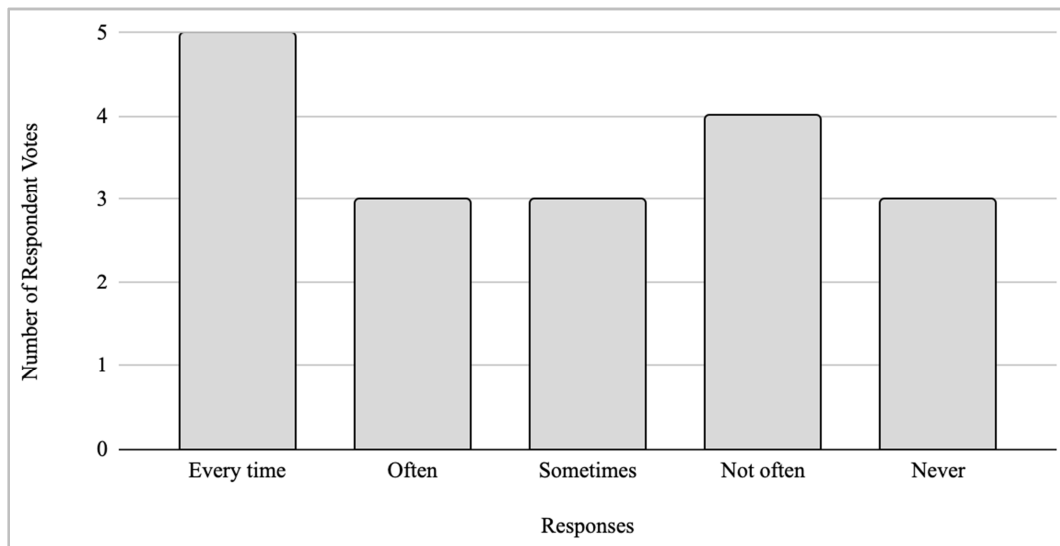


Figure 4. How Often OTPs Referred a Client with Hoarding Tendencies to a Psychotherapeutic Practitioner.

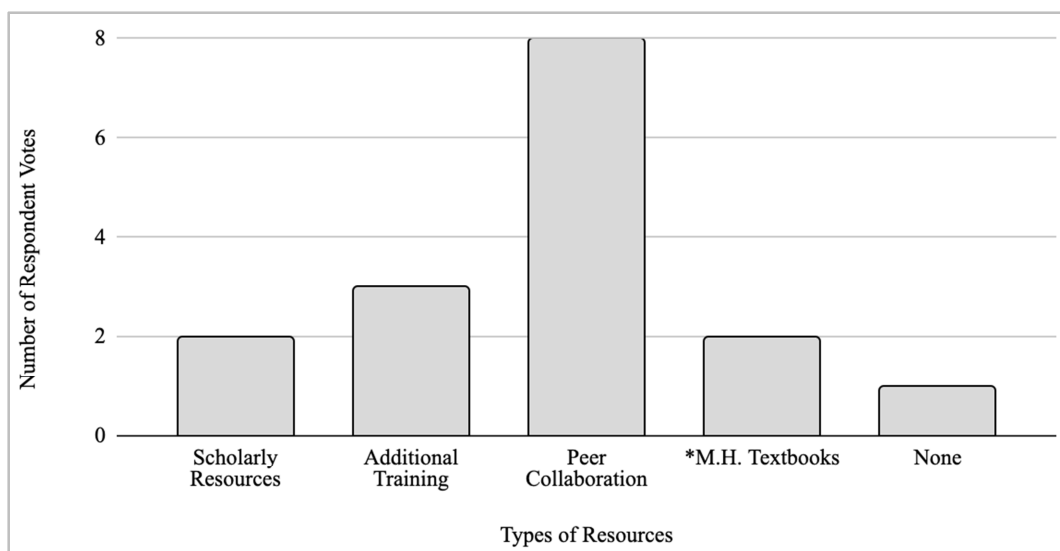


Figure 5. Methods of Building Rapport With Their Clients During Intervention Sessions.

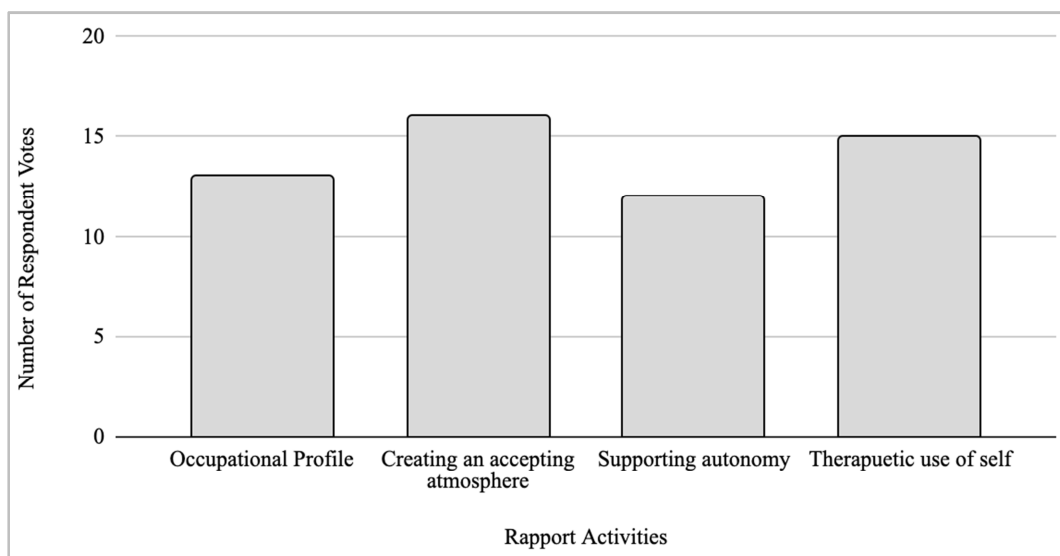


Figure 6. Methods of Building Rapport With Their Clients During Intervention Sessions.

3.2. RQ2: What Services Do OTPs Believe to Be the Most Effective in Managing Hoarding Behaviors in Their Clients

Six OTPs used standardized assessments for managing hoarding behaviors. Standardized assessments used by OTPs included the Katz Index of Independence in activities of daily living (ADL), Brief Mental Status Exam, Fatigue Severity Scale, Generalized Anxiety Disorder Screening Tool (GAD-4), Hoarding Rating Scale, Barthel Index, Allen's Cognitive Level Screening-5 (ACLS), Allen Diagnostic Model (ADM), Assessment of Motor Planning Skills (AMPS), Assessment of Compared Qualities-Occupational Performance (ACQ-OP), Modified Barthel Index, Quick DASH, Functional Reach, Timed Up and Go (TUG), Modified Clinical Test of Sensory Interaction on Balance (CTSIB-M), Columbia, and Patient Health Questionnaire (PHQ-9).

There were seven participants who identified the assessments that were perceived to be the most helpful for developing the most appropriate intervention plans, including the Barthel Index, Brief Mini-Mental Status Exam, clinical

observation and inquiry, knowledge of energy conservation principles, social-emotional assessments, the Above+ home assessment, and the PHQ-9.

Responses for the open-ended question regarding forms of interventions that were the most successful with their clients included home assessments with the family present, environment safety education, home safety checklist, psychosocial, meaningful tasks, executive functioning and mental health management, emotional processing based on interventions, CBT, CBT in conjunction with referrals, self-management techniques, environmental modification, mandatory fire codes training, occupation-based activities, motivational interview, utilizing the interdisciplinary team, conducting a home visit with social work, provide additional cueing and positive reinforcement, anxiety and stress coping strategies, therapeutic use of self, IADLs, routine maintenance, and scheduled maintenance. Please see Figure 7 regarding the frequencies that OTPs indicated that they utilize specific categorized interventions.

Interventions	% of OTPs	<i>n</i>
Environmental modifications	100%	18
Activity of Daily Living (ADL) training	88.9%	16
Instrumental Activity of Daily Living (IADL) training	83.3%	15
Functional or household mobility training	77.8%	14
Occupational-based therapeutic activity	77.8%	14
Personal safety training	72.2%	13
Self-management training.	72.2%	13
Coping strategies for feelings of depression or anxiety	61.1%	11
Home assessment and post-assessment education	55.6%	10
Adaptive equipment	50%	9
Cognitive behavioral therapy	33.3%	6
Executive cognitive function training	33.3%	6
Community reintegration	22.2%	4
Other Interventions	22.2%	4
Creative expression	16.7%	3
Group Therapy	6.6%	1

Figure 7. Frequency table of categorized interventions used by OTPs.

Regression analysis between the perceived effectiveness of a given intervention and the reported frequency of how often the intervention was used revealed three significant associations: frequency of environmental modification use and perceived effectiveness, $rs(18) = .550$, $p = .018$, where VS-MPR analysis indicated that the maximum possible odds

in favor of H_1 over H_0 equals 5.09 times more likely for $p = .018$; frequency of personal safety training and perceived effectiveness, $rs(18) = .543$, $p = .020$, where VS-MPR analysis indicated that the maximum possible odds in favor of H_1 over H_0 equals 4.70 times more likely for $p = .020$; and creative expression activity use and perceived effectiveness, $rs(18)$

$=.624$, $p = .006$, where VS-MPR analysis indicated that the maximum possible odds in favor of H_1 over H_0 equals 11.98 times more likely for $p = .006$. Other noteworthy associations included frequency of ADL Training use and perceived effectiveness, $rs(18) = .412$, $p = .066$, where VS-MPR analysis indicated that the maximum possible odds in favor of H_1 over H_0 equals 2.05 times more likely for $p = .066$; frequency of Self Management Training use and perceived effectiveness, $rs(18) = .443$, $p = .075$, where VS-MPR analysis indicated that the maximum possible odds in favor of H_1 over H_0 equals 1.89 times more likely for $p = .075$; and frequency of Occupation-Based Therapeutic Activity use and perceived effectiveness, $rs(18) = .444$, $p = .063$, where VS-MPR analysis indicated that the maximum possible odds in favor of H_1 over H_0 equals 2.11 times more likely for $p = .063$, however these results may require further testing to ascertain their overall levels of conclusiveness.

4. Conclusion

4.1. Discussion

The results of this study affirm that OTPs generally find complex systems of techniques as more effective than single techniques for treating those with hoarding disorders [10]. Specifically, regression analysis supports that a combination of environmental modification strategies, personal safety training, creative expression activities, ADL training, self-management training and occupation-based therapeutic activity may be perceived as the most effective interventions for the management of those with hoarding disorders in their home environments. The outcomes of this study are well supported by Rachev & Janssen [8], who alleged that client-centered and a practical skills approach for treating those with hoarding disorders are generally most viable. Of interest, while meal preparation and financial skills are widely considered to be important IADL skills for OTPs to address in the treatment of those with hoarding disorders, not a single participant specifically indicated that they addressed either one of these dimensions within their responses regarding IADL interventions [5]. On the other hand, every OTP indicated that they utilized environmental modification and personal safety training, which is only appropriate given the general emphasis on the dysfunctional environmental context for the home health management of those with hoarding disorders.

The majority of OTP participants found that interventions that were perceived to work best with higher caseloads of hoarding patients consisted of environmental modification, personal safety training, and creative expression activities. Environmental modifications were deemed important to address functional mobility, how it affected individuals on the engagement within their occupations and their environments, as supported by Neziroglu [2]. All of the participants in the study indicated that they had used environmental modifications as an intervention and that they found it effective. OTPs stated that educating clients about

appropriate environmental modifications were more effective than educating the individuals on fall safety, fire safety, and general hoarding education. Literature from Dorne supported that personal safety training was effective in addressing functional mobility within hoarding environments [3]. 72.2% of participants believed that personal safety training was an effective intervention. Creative expression activities were supported by Cole & Tufano [11] who found that creative outlets were used to help address an individual's ability to express their feelings and work towards a healthy ego adaptation. Only 16.7% of the participants indicated that they had used creative expression as a hoarding intervention. However, there was a universal agreement among participants that indicated creative expression was the most effective intervention tool when managing hoarding behaviors within client populations.

OTPs in the study felt that they must build rapport to have a successful session with their hoarding populations. The OTPs in the study said the best way to go about building rapport was to create a supportive atmosphere for their client during their initial treatment session, followed closely by using therapeutic use of self, then building their occupational profile, and lastly supporting the client's need to stay autonomous. Rachev and Janssen [9] suggest that the best way to deal with hoarding populations was to allow the individuals to pick the occupations they engage in to establish that initial rapport and build client autonomy. Although many of the OTPs indicated that client autonomy was important, it was not the most utilized in developing rapport.

4.2. Limitations and Future Research

In regards to limitations of this study, reproductions of this study should prioritize a larger sample size to improve the statistical power of future analyses, which could likely be remedied by a longer data collection phase. Another limitation of the study is the lack of literature surrounding direct treatment strategies for those with hoarding disorders, which is supported by the broad responses of used interventions received from participants in this study as there are very few evidence-based interventions that treat hoarding tendencies. Given this, qualitative phenomenological interviewing may be useful for gathering more granular data from participants on what interventions work well, and the qualities in which they do work. Further reproductions of this study may also enable either the refinement or psychometric validation of the instrument used in this study.

Conflict of Interests

The authors declare that they have no competing interests.

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