RE-DETERMINE THE RELATIONSHIP BETWEEN

PEOPLE-THINGS-SPACE

BY

RONGFENG YAO

A THESIS SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR

THE DEGREE OF MASTER OF FINE ARTS IN DESIGN

COLLEGE OF DESIGN

GRADUATE SCHOOL, RANGSIT UNIVERSITY

ACADEMIC YEAR 2024
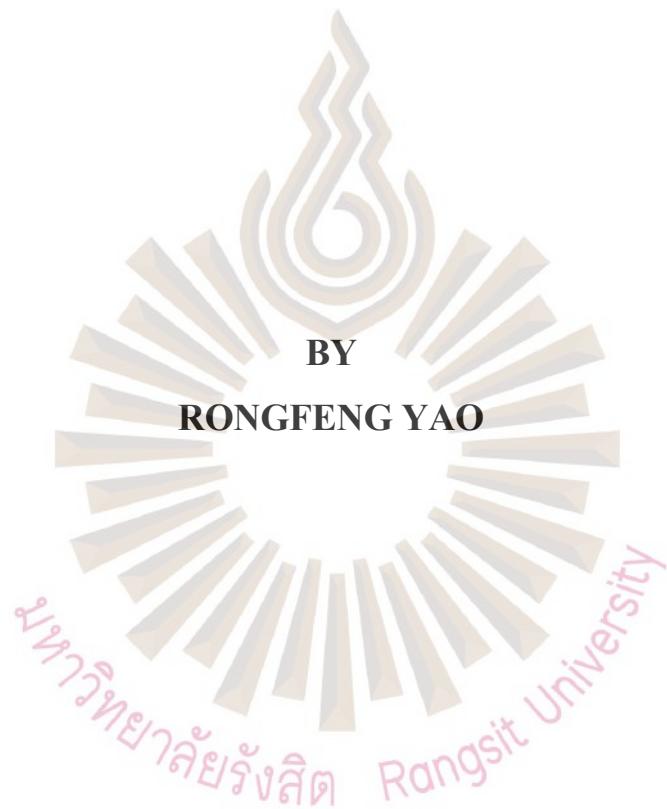
Thesis entitled

RE-DETERMINE THE RELATIONSHIP BETWEEN PEOPLE-THINGS-SPACE

by

RONGFENG YAO

was submitted in partial fulfillment of the requirements

for the degree of Master of Fine Arts in Design

Rangsit University

Academic Year 2024

---   ---

Assoc. Prof. Pisprapai Sarasalin   Prof. Eakachat Joneurairatana, Ph.D.

Examination Committee Chairperson   Member

Assoc. Prof. Paijit Ingsiriwat

Member and Advisor

Approved by Graduate School

(Prof. Suejit. Pechprasarn, Ph.D.)

Dean of Graduate School

August 30, 2024

Acknowledgements

During my two years at Rangsit University, I have experienced significant progress and thank my advisor professor Sridhar Ryalie for her patient guidance and professional advice throughout. Thank you professor Anisa for your kind encouragement. Thank you to all the tutors at Rangsit University for creating a good and relaxed learning environment, each teacher is very serious and responsible, giving timely feedback and answers to our questions. Finally, I would like to express my sincere thanks to my family and friends for their support and encouragement. Your support is my motivation to keep studying.

Rongfeng Yao

Researcher

6609812	:	Rongfeng Yao
Thesis Title	:	Re-Determine the Relationship Between People-Things-Space
Program	:	Master of Fine Arts in Design
Thesis Advisor	:	Assoc. Prof. Paijit Ingsiriwat

Abstract

With technology's advancement simplifying shopping, hoarding disorder (HD) emerges as an escalating social concern, highlighting the need for more engaging treatment methods.This study is designed to address HD by developing interactive object classification games, aiming to redefine the relationship between individuals, possessions, and spaces. The objectives of this study were 1) to develop an engaging tool that facilitates the decluttering process for individuals with HD through gamification; and 2) to evaluate the game's effectiveness in enhancing engagement and treatment outcomes against traditional therapies. Employing a comprehensive literature review and innovative game design,the research methodologically explores how interactive elements can augment cognitive and organizational skills. The preliminary results suggest that gamified interventions could offer a promising alternative to conventional treatments by improving patient engagement and potentially fostering healthier consumption habits. Future research will focus on refining the game based on user feedback and expanding its application to offer more comprehensive solutions for HD, aiming to contribute to the reduction of societal resource wastage and the promotion of sustainable practices. This approach underscores the importance of alternative, engaging treatment modalities for HD, advocating a shift towards more interactive and user-friendly therapeutie interventions.

(Total 52 pages)

Keywords: Hoarding Disorder (HD), Re-Determine

Student's Signature .... Thesis Advisor's Signature ....

Table of Contents

Table of Contents (continued)

List of Tables

List of Figures

Chapter 1

Introduction

1.1 Background and Significance of the Problem

The sudden outbreak of the pandemic has led to various hoarding behaviors worldwide, causing heightened anxiety among people. Instances of irrational hoarding, such as stockpiling masks, food, and medications, have become prevalent. The internet is flooded with methods encouraging hoarding, exacerbating the situation (Zhang, 2020). As a result, the frequency of the term "hoarding" has surged, prompting increased awareness and research into the personal, familial, and societal issues caused by hoarding behaviors.

Hoarding and cluttering behaviors are defined as the acquisition and inability to discard items perceived as useless or of limited value by others (Frost, 1993, 1996). When these behaviors lead to the accumulation of a substantial number of items, impairing daily activities, or causing distress to oneself or others in the household, they become problematic (Steketee, 2007).

Current estimates suggest a significant prevalence of hoarding disorder globally. However, the data is inconsistent.

Let's delve into the current population of individuals with hoarding disorder worldwide.

Hoarding disorder was initially considered a symptom of OCD, and early studies were based on OCD surveys:

A survey in 2008 across 14 Western countries, including the United States, Canada, France, and Germany, indicated a hoarding disorder prevalence of 2%-5% (Stewart, 2008).

An epidemiological survey in 2008 suggested an average prevalence of hoarding disorders at approximately 4%, with higher rates in pediatric (4.8%) and elderly (5.5%) samples (Sica, 2009).

In 2009, countries like the US, UK, Germany, and Italy reported hoarding disorder prevalence rates between 2.3%-4% (Bulli, 2013; Mueller, 2009; Samuels, 2009).

In 2013, prevalence estimates ranged from 1.4% to 5.8% in the general population (Nordsletten, 2013).

In 2019, it was reported that approximately 2.5% of the population exhibited hoarding disorder characteristics, leading to difficulties discarding items and creating cluttered living spaces (APA, 2014; Postlethwaite, 2019).

In 2013, Diagnostic and statistical manual of mental disorders (5th ed.) (DSM-5). Separated hoarding disorder from OCD and OCPD, recognizing it as a distinct mental disorder. The prevalence, according to DSM-5, ranges from 2% to 6%.

Moreover, knowledge about the demographic and clinical characteristics of individuals exhibiting hoarding behaviors is limited to specific samples and may not reflect the broader community.

Hoarding disorder has only recently gained recognition as an independent condition, leading to a scarcity of large-scale clinical studies.

Although research on hoarding treatment is increasing, there is a significant gap in personalized treatment studies, particularly combining cognitive-behavioral therapy (CBT) with other therapeutic approaches.

Research Significance:

Advancing Understanding of Hoarding Disorder Dynamics:

Investigating hoarding disorder from a playful perspective will contribute novel insights into the underlying dynamics of the condition. By exploring the motivations and behaviors associated with hoarding in a more engaging manner, we aim to enhance our understanding of the disorder's complexity.

Promoting Patient Engagement and Practice:

Emphasizing a playful approach seeks to inspire patient interest and commitment to treatment. By incorporating enjoyable elements into therapeutic interventions, we anticipate increased patient engagement and a higher likelihood of sustained practice, ultimately enhancing the effectiveness of treatment.

1.2 Research Objectives

1.2.1 To explore to hoarding disorder from a playful perspective, inspiring patient interest and encouraging repeated practice.

1.2.2 To emphasize the importance of patient support from trusted friends and family, cultivating attention, and reducing loneliness, with potential positive effects on social integration.

1.2.3 To provide a fresh perspective on the study and treatment of hoarding disorder.

By addressing these research objectives, contribute to a better understanding of hoarding disorder and explore innovative and effective treatment approaches.

1.3 Research Framework

This thesis presents an alternative research study focusing on the treatment of hoarding disorder through a combination of foundational cognitive-behavioral therapy and game therapy. The document is structured into five chapters, comprising an introduction, literature review, methodology, design process, and conclusion.

The literature review emphasizes the summarization of recent research on novel perspectives in hoarding disorder treatment. Building upon existing therapeutic methods, we introduce an alternative game therapy approach and identify future research areas. The methodology chapter provides a brief overview of establishing a cognitive-behavioral-based treatment supplemented with game assistance. Addressing challenges related to patients' irrational cognition and uncontrollable hoarding behavior, we analyze effective information on item classification from the market. This information guides the formulation of game design concepts, material selection, experimental processes, and the final design product.

A particularly alternative aspect of the design process is the integration of game dynamics with item classification. Traditional cognitive therapy steps involving appointments, interviews, questionnaire responses, and survey participation are time-consuming, energy-intensive, and may lead to mental distress, causing some individuals to withdraw (David, 2022). Games, being enjoyable, stress-free, and space-efficient, offer an extension to existing treatment methods, filling a void in the therapeutic approach.

The chapter concludes by summarizing highlighted issues and future research areas, discussing study limitations, and proposing corresponding expansion

methods. Ultimately, the study's outcome serves as a new supplement to the treatment of hoarding disorder. Beyond addressing hoarding disorder, it also provides an effective intervention for individuals seeking to reduce household clutter.

Chapter 2

Literature Review

2.1 Hoarding Disorder

2.1.1 Typical Symptoms of Hoarding Disorder

The Collyer brothers, born in the 1880s, gained notoriety for their severe hoarding disorder, leading to their discovery dead in their New York City home at 2078 Fifth Avenue in 1947, accompanied by an astounding 140 tons of accumulated "junk." This extreme case gave rise to the term "Collyer Brothers Syndrome,"marking them as pioneers of hoarding disorder (Herring, 2011)

Figure 2.1 Collyer brothers (1)
Source: Criticism, 2011

Figure 2.2 Collyer brothers (2)

Source: Criticism, 2011

Hoarding, a tendency retained throughout human evolution, originally served as a natural response to unforeseen needs by accumulating a small reserve of items. However, when hoarding exceeds normal limits, it can lead to hoarding disorder. This behavior has ancient roots, as individuals historically stored food, tools, and various items to enhance survival. While hoarding for survival has positive implications, emotional attachment to items can also drive hoarding, turning it into a pathological behavior. In modern society, characterized by abundant material wealth, excessive hoarding can disrupt living spaces, unbalance life, cause significant personal distress, and negatively impact both individuals and society.

Characteristics and Diagnostic Criteria:

Hoarding behavior, termed "pathological collecting," is defined by the acquisition and reluctance or inability to discard items perceived as useless or of limited value (Frost, 1993, 1996). Typical symptoms include deficient information

processing, irrational beliefs, difficulty regulating emotions, and severe hoarding behaviors (Frost, 1996; Steketee, 2006).

According to Frost and Gross (1993), the key characteristics of hoarding and cluttering behaviors encompass a cluttered home environment, excessive acquisition of items, and difficulty discarding items (Frost, 1996; Steketee, 2003). The accumulation of clutter may interfere with normal household activities and increase the risk of injuries due to fires and falls, as well as health risks due to poor hygiene (Frost, 2000; Steketee, 2001).

Previously considered a subtype of Obsessive-Compulsive Disorder (OCD), recent research has prompted clinicians to recognize hoarding behaviors as a distinct disorder (Mataix-Cols, 2010). The proposed diagnosis for "Hoarding Disorder" in the upcoming DSM-V (Diagnostic and statistical manual of mental disorders. 5th ed.) includes persistent difficulty discarding items, distress due to intense urges to save or discard items, and symptoms leading to clutter accumulation that impairs normal functioning (American Psychiatric Association, 2010).

The Collyer brothers' story serves as the origin of hoarding disorder, highlighting its typical characteristics. With the inclusion of hoarding disorder in DSM-V (Diagnostic and statistical manual of mental disorders), a consistent definition will aid in identification and research of this condition.

2.1.2 Typical Symptoms of People with Hoarding Disorder

Individuals with hoarding disorder typically exhibit two prominent features: difficulty discarding items and excessive acquisition. Some researchers view hoarding as a non-productive character, characterized by suspicion and social withdrawal, using the accumulation of items to create a sense of security (Fromm, 1947).

In recent years, the prevalence of hoarding-related searches has surged, likely exacerbated by the COVID- 19 pandemic. Reported cases describe individuals living in severely cluttered and dirty environments, highlighting the impact of hoarding on personal hygiene and living conditions (Frank, 2004; Greenberg, 1990; Patronek, 1999).

Common Features of Hoarding Behaviors:

Frost emphasized common social, emotional, and behavioral features among hoarding patients, including irrational beliefs about items, emotional attachment to possessions, difficulty establishing harmonious relationships, severe acquisition and discarding challenges, and neglecting external influences (Frost, 1996).

Problematic Hoarding Behaviors:

Hoarding becomes problematic when the accumulation of belongings impairs normal daily activities or causes distress to the individual or others in the home (Steketee, 2003). This behavior can result in a chaotic living space, causing significant distress and functional impairment to individuals and their family members (Tolin, 2008).

Impact on Mental and Physiological Health:

Research indicates that hoarding issues are prevalent in the population and significantly affect psychological and physiological health, inducing strong negative emotions (Mueller, 2009).

Cognitive and Neuropsychiatric Aspects:

Most cases of clutter accumulation can be traced back to cognitive errors, where faulty thinking leads to behavioral dysregulation and potential loss of control. Studies employing brain imaging and neuropsychiatric evaluations have identified cognitive impairments in executive functioning, attention regulation, and impulsivity

in individuals with hoarding behaviors (Frost, 2001; Mataix-Cols, 2011; O'Sullivan, 2010).

2.1.3 Conclusion

The conducted studies have provided us with in-depth insights into the severe consequences of these behaviors, examining their impact on individuals and the communities in which they live. Correspondingly, effective treatment methods have been researched and identified.

Currently, widely accepted cognitive-behavioral therapy has been scientifically proven to effectively reduce a portion of hoarding behaviors. However, not all individuals displaying hoarding and clutter behaviors are willing to undergo this method, and a portion of them chooses not to accept treatment or discontinues it. This is an aspect that has been overlooked by many. We have reason to believe that in the coming decades, the number of individuals with hoarding disorder will continue to rise.

This article aims to systematically review the current research on the treatment of hoarding disorder. The terms "hoarding disorder" and "individuals with hoarding behaviors" will be used throughout the article to define the issue and the affected population. By revisiting studies on the treatment of hoarding disorder, we can gain a better understanding of the existing deficiencies in our knowledge and provide assistance.

This thesis is part of a comprehensive literature review evaluating the overall research status of hoarding disorder. It outlines the search methods employed in the literature review and provides a brief introduction to the general background and treatment status of hoarding disorder. Innovative

research approaches for future studies on hoarding disorder treatment are discussed, followed by an overview of the current shortcomings in our understanding of hoarding disorder treatment.

2.2 Research Methodology

In the present-day environment, information is omnipresent, sourced from various platforms such as social media, medical professional organizations, expert personal websites, books, individual experiences, literature databases, BILIBILI videos, Little Red Book, Weibo, WeChat Reading, web pages, Mendeley, YouTube, and organizing services. A wealth of information regarding treatment methods has been collected.

The following table is a partial list of treatment methods collected from the literature. We can see that people are constantly looking for diversified treatment channels and trying to find more effective treatments.

Table 2.1 Treatments in the literature

Author	treatment method	source
H.et al	VR treatment with virtual	10.1016/j.jpsychires.2023.08.002
H.et al.	extend CBT for HD	10. 1891/jcp-2022-0009
Litvin al	SCIT	10.1016/j.jocrd.2022.10077610
K.et.al	addressing loneliness in the HD treatment.	10.1016/j.jocrd.2023.100806
S.et.al	10 weeks of in-home decluttering (SRI)	10.1186/s13063-023-07509-4
P.et al	Pharmacotherapies	10.1016/j.comppsych.2022.152352

Source: Researcher

Over the past 20 years, there have been many changes in the diagnostic criteria, treatments and classification of hoarding disorder. However, hoarding behavior has consistently been considered the most core symptom (Frost, 2012).

In the treatment of hoarding disorder, the challenge of encouraging individuals with hoarding tendencies to discard items has been persistent. Currently, research addressing these issues is continuously evolving. Strategies for reducing hoarding behavior can be categorized into three main types: Cognitive-Behavioral Therapy (CBT), medication therapy, and integrated therapy. In addition to these three approaches, harm reduction interventions (Tompkins, 2011), and behavioral inhibition therapy (Snowdon, 2009) can also be employed. However, the effectiveness of these therapies remains uncertain and has only been applied in specific studies.

Existing treatment methods for hoarding disorder have their respective strengths and limitations, requiring continual refinement in practical application. Particularly, the combination of Cognitive-Behavioral Therapy with other psychotherapies such as family therapy and interpersonal psychotherapy may potentially address certain shortcomings of Cognitive-Behavioral Therapy in hoarding disorder treatment, resulting in improved therapeutic outcomes.

Hoarding behaviors are the primary outward manifestation of hoarding disorder, and cognitive behavioral therapy, which integrates traditional cognitive and behavioral therapies, can be effective in addressing hoarding behaviors. This approach helps patients gradually recognize cognitive problems and face them head-on through a dialogical approach, while inhibiting or directing their hoarding behaviors. When hoarding is treated as a stand-alone disorder with cognitive behavioral therapy, patients' symptoms improve by an average of about 25% (David, 2021). Therefore, we based our treatment study on CBT.

2.3 Cognitive Behavioral Therapy Research

2.3.1 Cognitive Behavioral Therapy (CBT)

The first cognitive-behavioral model of hoarding was proposed by (Frost, 1996) and later expanded upon by (Steketee, 2003). In this model, issues with information processing, maladaptive beliefs, and excessive attachment to possessions are considered to contribute to behavioral avoidance problems. These problems are characterized by evading decisions to discard items, thereby saving possessions to avoid distress (Frost, 1996). Experimental evidence indicates that individuals with hoarding problems take longer to decide to discard possessions, experience more anxiety, and acquire and save more items compared to healthy controls (Frost, 2016; Levy, 2019; Preston, 2009; Tolin, 2009). The interconnected difficulties proposed in the model are believed to lead to positive and negative emotions that drive excessive acquiring and saving behaviors (Frost, 1996; Steketee, 2003). Accumulating evidence provides some support for this model.

Treatment of HD – Cognitive Behavioral Therapy (CBT)

Cognitive behavioral therapy (CBT) is designed for use by mental health clinicians who are treating clients with hoarding disorder (HD). It can also be used effectively by novice therapists and non-mental health professionals, as well as by peers or other laypersons who are well trained in understanding HD and in how to use these therapy methods. Whenever possible, regular practice inside the client's home with help from home visitors (clinicians, coaches, peers, etc.) is recommended. However, it is important to be aware that most people who receive treatment still need additional help to fully resolve their hoarding problems.

2.3.2 Cognitive behavioral therapy content

Frost and Hartl's Cognitive Behavioral model of   Hoarding

CBT Components and Approximate Session Requirements:

1) Assessment of Hoarding Symptoms and Other Concerns: 2 sessions(Note: These sessions may exceed the standard 1-hour duration).

2) Formulating a Personal Model to Understand Hoarding Reasons:2 sessions

3) Motivational Interviewing to Address Ambivalenceand Low Insight:Ongoing,as needed

4) Skills Training for Categorizing, Organizing, and Problem Solving: 3 or more sessions

5) Practicing Sorting, Decision-Making, and Discarding: 15 or more sessions It is recommended that clinicians allocate up to 2 hours for home visit sessions. For in-office sessions, therapists can adhere to the standard 1 hour and invite clients to bring items for practicing sorting, problem-solving skills, and decision-making about keeping or discarding.

6) Cognitive Therapy: Ongoing during most therapy aspects, especially sorting sessions

7) Preventing Relapse: 2 final sessions

Once the client has acquired organizing and decision-making skills (typically after at least 15 sessions of practice), if the home is significantly cluttered, they might decide to collaborate with a closely supervised "cleaning crew" for substantial clutterreduction. Such an effort must receive explicit permission from the client and careful supervision by the therapist, adhering to rules established by the client.

Note: Forced cleanouts by public authorities or relatives often lead to anger and hurt reactions, complicating the treatment process. They should only be used when necessary for health and safety, involving the person with HD as much as possible in decisions about possessions.

2.3.3 The Therapeutic Effectiveness

Research shows that when treated with cognitive therapy, individuals report an average improvement in symptoms of approximately 25%. These improvements usually last one year after treatment. However, it is important to recognize that most people in treatment may still require additional assistance to fully resolve their hoarding issues (David, 2021).

Additionally, limited research suggests post-treatment changes, including reduced attachment to possessions (Dozier, 2017) and enhanced visuospatial processing, decision-making, and information processing speed (Zakrzewski, 2020). Notably, alterations in hoarding beliefs have been identified as mediators for the reduction in hoarding symptoms from pre- to post-treatment (Levy, 2017; Tolin, 2019).

2.3.4 Cognitive Behavioral Disadvantages

The CBT program typically spans a lengthy period, usually lasting around six months to a year. In many instances, home visits are not feasible, leading to certain difficulties. Each therapy session follows a consistent pattern, beginning with a brief examination of homework assignments, followed by a review of the homework and the establishment of the therapy plan. Subsequently, the therapist and the visitor collaboratively complete tasks during the consultation and work on homework over the next week.

Therefore, for those who do not accept cognitive-behavioral therapy and choose to with draw, new therapeutic methods are needed. Consideration should be given to simplified, personalized interventions conducted in a stress-free, relaxed environment.

In this section, we elaborate on several potential approaches to enhance CBT for HD, including integrating emotion regulation and interpersonal strategies, improving exposure therapy, increasing opportunities for in-home support, and incorporating the harm reduction approach into the current hoarding treatment model. Summarizing the shortcomings of cognitive-behavioral therapy and proposing new suggestions.

2.3.5 Innovative Treatment Methods

Considering the organizational and categorization challenges faced by individuals with hoarding disorder and designing personalized intervention measures based on the outcomes of this consideration. Implementing engaging and enjoyable games in a relaxed environment to stimulate their motivation, closely integrating games with practical activities. Amplifying the repetitive behavior of discarding items in an unrestricted and unsupervised setting.

Compared to traditional cognitive therapy, personalized game interventions are more economically convenient for several reasons: 1) they cover a broad spectrum of hoarding clients, including those who do not accept home visits or need to go to the hospital; 2) by playing games, attention is shifted and engaged; 3) multiplayer games facilitate social expansion; 4) they create a relaxed and burden-free atmosphere; 5) there is no economic pressure. This exploratory game design can help increase the likelihood of repetitive discarding behavior among hoarding groups and train hoarders' categorization and decision-making abilities. However, whether it can generate greater improvements than existing therapies remains an uncertain question, deserving further research.

2.4 Conclusion

In the course of My research, new questions have continually emerged, and concurrently, there have been ongoing improvements in treatment methods. To

gain a deeper and more comprehensive understanding of this phenomenon and develop more effective personalized treatment approaches, I have experimenting with diverse auxiliary tools to complement Cognitive Behavioral Therapy (CBT) in the hope of facilitating positive outcomes.

This thesis aims to systematically review the current research on the treatment of hoarding disorder. The term "hoarding disorder" will be used to identify these behaviors. By reviewing the current domestic and international research status, we can better understand the existing deficiencies and explore how to improve or try other measures based on previous research. Moreover, efforts will be intensified to promote knowledge related to hoarding disorder, raise awareness of its harmfulness, and highlight the strengths and weaknesses of existing treatment methods. Combining these therapies with other methods, such as family group therapy, psychotherapy, game therapy, virtual therapy, personalized therapy, etc., may potentially address certain shortcomings of Cognitive Behavioral Therapy in the treatment of hoarding disorder. This remains an area that requires further research.

The current research results provide several promising directions for future studies. Additionally, the current work offers practical recommendations for strengthening hoarding intervention measures, providing clear guidance for future endeavors.

Chapter 3

Research Methodology

3.1 Prototype Design

While research on the treatment of hoarding disorder has slowly increased over the past few decades and has gained attention, there has been little exploration from alternative perspectives, such as using games to assist patients. This is a neglect that needs correction as humans inherently enjoy playing. Whether it's shopping, family gatherings, dinner with friends, or other enjoyable activities, they all involve an element of play. Games usually have a goal, be it meeting the requirements of a level or winning against other players.

Games fulfill the needs of attention diversion and social interaction, creating an overall relaxing emotional experience. In summary, using game design to assist individuals with hoarding disorder is a mutually beneficial approach that aligns with fundamental human tendencies and the inherent characteristics of games.

Concept: Creating something simple for trial and evaluation

Based on the contents of Cognitive Behavioral Therapy (CBT), we understand that one of the most crucial steps is the categorization and decision-making process for discarding items. Inviting clients to bring items for practice in categorization and making decisions to keep or discard them poses a challenge. The quantity, volume, and functionality of the items clients bring are unclear. What criteria should be used for selecting items to bring, and is there a clear rationale? How to carry these items is also a question.

Are there alternative methods or materials that can be used? Let's first explore international guidelines and resources on organizing and discarding items. Detailed discussions on this topic can be found in books by Hideko Yamashita and Marie Knodo from Japan. Standards for categorizing and discarding items can be tailored to individual real-life situations.

Figure 3.1 Hideko Yamashita

Source: douban, 2022
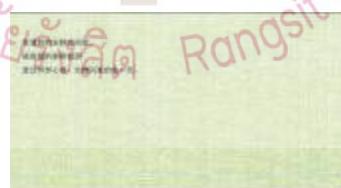
Figure 3.2 Marie Kondo

Source: baidu, 2018

Following the examples in the book, we are creating cards to categorize items instead of bringing them for experimentation when going out.

Model Construction:

Selecting durable cardstock that is not easily torn, we start by broadly categorizing the items:

Figure 3.3   Item Classification (1)

On this basis, further subdivide the items:

Figure 3.4   Item Classification (2)

Partitioning the Placement Areas for Items:
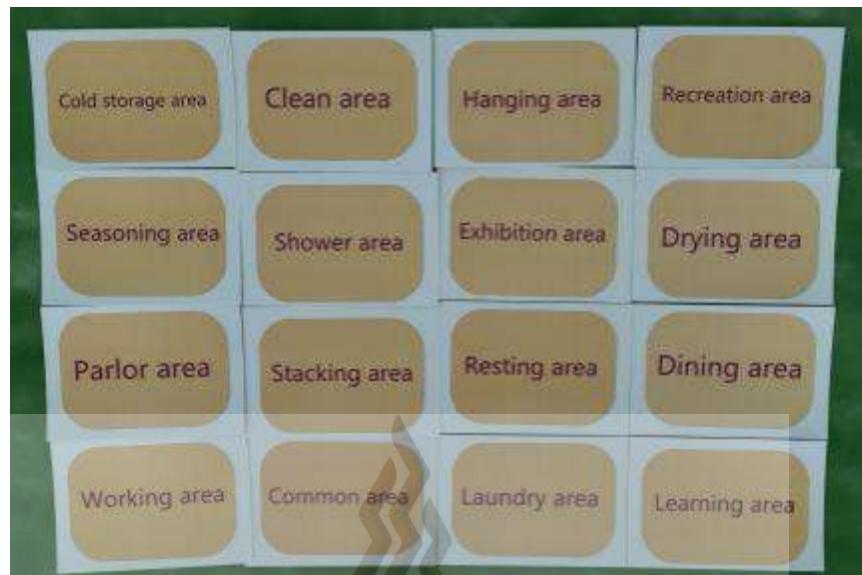
Figure 3.5   Area Division

This card set is portable, convenient, cost-effective, and easy to make.

Practical Exercises:

Without clear goals and rules, users may feel lost, concepts become confusing, and the experience is not engaging.

Solution: Choose simple and fun games, break them down, and incorporate item classification into the activities.

3.2 Game Deconstruction

The core of the game should be to establish a cyclic pattern, built around repeatable elements, attracting users to play over and over again in an entertaining manner. In this process, users can achieve certain objectives.

Outline the goals you hope users will achieve in the game:

1) Teach users something, enhancing their organizational and categorization skills.

2) Set goals achievable through the game, such as discarding items.

3) Starting from users' typical symptoms, experiment with interesting game mechanics using tools like building blocks, cards, etc., to stimulate user engagement.

4) Design the number of participants in the game to promote social skills.

5) Establish game rules that, under the constraints of fairness, lead to the desired outcome of discarding.

6) Expand detailed classification rules based on the characteristics of items to facilitate user navigation.

7) Encourage as many people as possible to play your physical prototype as early as possible.

8) Keep the game rules simple, easy to learn with just one viewing.

During the ideation phase, create as many different prototypes as possible. Each prototype will explore one or more ideas for your game design. Iterate on your physical prototypes at any time.

3.3 Source of Inspiration

The Stick-Picking Game is a traditional folk game with simple rules, easy to pick up, and loved by children of all ages. It is a childhood favorite, requiring no cost or specific location, making it easy to learn and play. Small sticks, readily available like twigs, long matches, ice cream sticks, chopsticks, and more, can be used for the game. Compared to other games, Stick-Picking is relatively quiet, engaging the mind and requiring concentration. It effectively exercises users' attention, observation, judgment, and analytical skills while enhancing hand-eye

coordination and finger dexterity. This intellectual game is suitable for individuals aged eight and above, appealing to a wide range of ages.
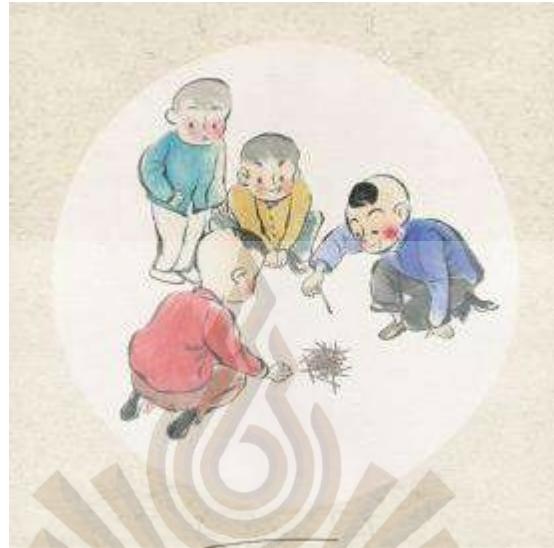
Figure 3.6   Ancient Bamboo Stick Picking Game

Source:zcool, 2019

Chapter 4

Research Results

4.1 Things Design

Game Concept: Hoarding Obstacle Overcomer

Exploratory Research: Personalized Therapy

Game Objective: Simplicity and Fun with Recyclability

Game Outcome: Increase willingness to change behaviors in hoarding obstacle overcomers.

Game Requirements:

Unrestricted Location: Playable in any space.

Economical and Lightweight Materials: Utilize affordable and portable materials.

Small Number of Participants: Designed for a limited number of players.

Simplicity and Enjoyment: Ensure the game is straightforward and entertaining.

No Time Constraints: Play without time limitations.

Repeatable: Structured for repeated cycles.

Environmentally Friendly: Adhering to eco-friendly principles.

Game Description:

In the "Hoarding Obstacle Overcomer" game, participants engage in a simplified and enjoyable experience tailored for individuals facing hoarding

challenges. The game aims to enhance the willingness of hoarding obstacle overcomers to embrace behavioral change.

The game can be played in any available space.

Utilize cost-effective and lightweight materials for game setup.

Keep the number of participants to a minimum for a more focused experience.

Emphasize simplicity and enjoyment to create an engaging atmosphere.

Allow players to progress at their own pace without time constraints.

Structure the game to be repeatable, fostering continuous engagement.

Design the game with an environmentally friendly approach, promoting sustainability.

The "Hoarding Obstacle Overcomer" game serves as a personalized and effective therapeutic tool, promoting a positive and supportive environment for individuals seeking to overcome hoarding tendencies.

4.2 Design Process

4.2.1 Choosing Game Formats

The design concept for the game is inspired by classic childhood games such as (Rock, Paper, Scissors), (Pick Up the Popsicle Sticks), (Hide and Seek), and (Spinning Tops). Following the game requirements, a thoughtful combination was attempted to eliminate redundancy and retain those most suitable, aiming to bring a fresh perspective to the gaming experience.

After careful consideration, the following games were selected:

Rock, Paper, Scissors

Pick-Up Sticks

Hide and Seek

4.2.2 Selecting Game Materials

Considering the chosen games:

1) Rock, Paper, Scissors:

No materials required; suitable for any game initiation,winner takes precedence.

2) Pick Bamboo Sticks:

Eco-friendly, suitable for a small number of people, materials are inexpensive and lightweight. No time or environmental constraints, and can be used repeatedly.

3) Hide and Seek:

Original Objective: Finding people.

Modified Objective: Finding objects.

Determine Materials: Bamboo Sticks

Figure 4.1   Material Selection (1)

How to Combine the Three Games:

Rock, Paper, Scissors : Introduce at the beginning of the gaming session; strategically positioned.

Integrate Pick Bamboo Sticks with Hide and Seek.

Incorporate bamboo sticks for Pick-Up Sticks, and modify Hide and Seek to involve finding objects instead ofpeople.

Note: Ensure seamless transitions between games

Considerations: Connecting Objects with Bamboo Sticks.

Placing bamboo sticks directly into objects as markers   (Not Feasible):

Writing Object Features on Paper and Attaching to Bamboo Sticks (Not Feasible): as bamboo sticks are thin and prone to falling.

Replacing Bamboo Sticks with Wooden Sticks (Feasible):

Substituting bamboo sticks with eco-friendly wooden sticks allows for larger dimensions, making it easier to write on.

Categorizing Objects and Using Colored Markers to Write Directly on Wooden Sticks (Feasible):

Conclusion：Classifying objects and directly writing on larger wooden sticks with colored markers is a practical and feasible approach.

Figure 4.2   Material Selection (2)

4.2.3 Game Experimental Process:

First version:

1) Choose solid color wooden sticks, 60 sticks, write the number

2) Use a red marker to write down the characteristics of the item you are looking for.

3) The characteristics of items are distinguished by taste, plants, materials, functions, etc.

Figure 4.3 First Version Of Finished Game (1)

Figure 4.4 First Version Of Finished Game (2)

Try playing the game and see the effect:
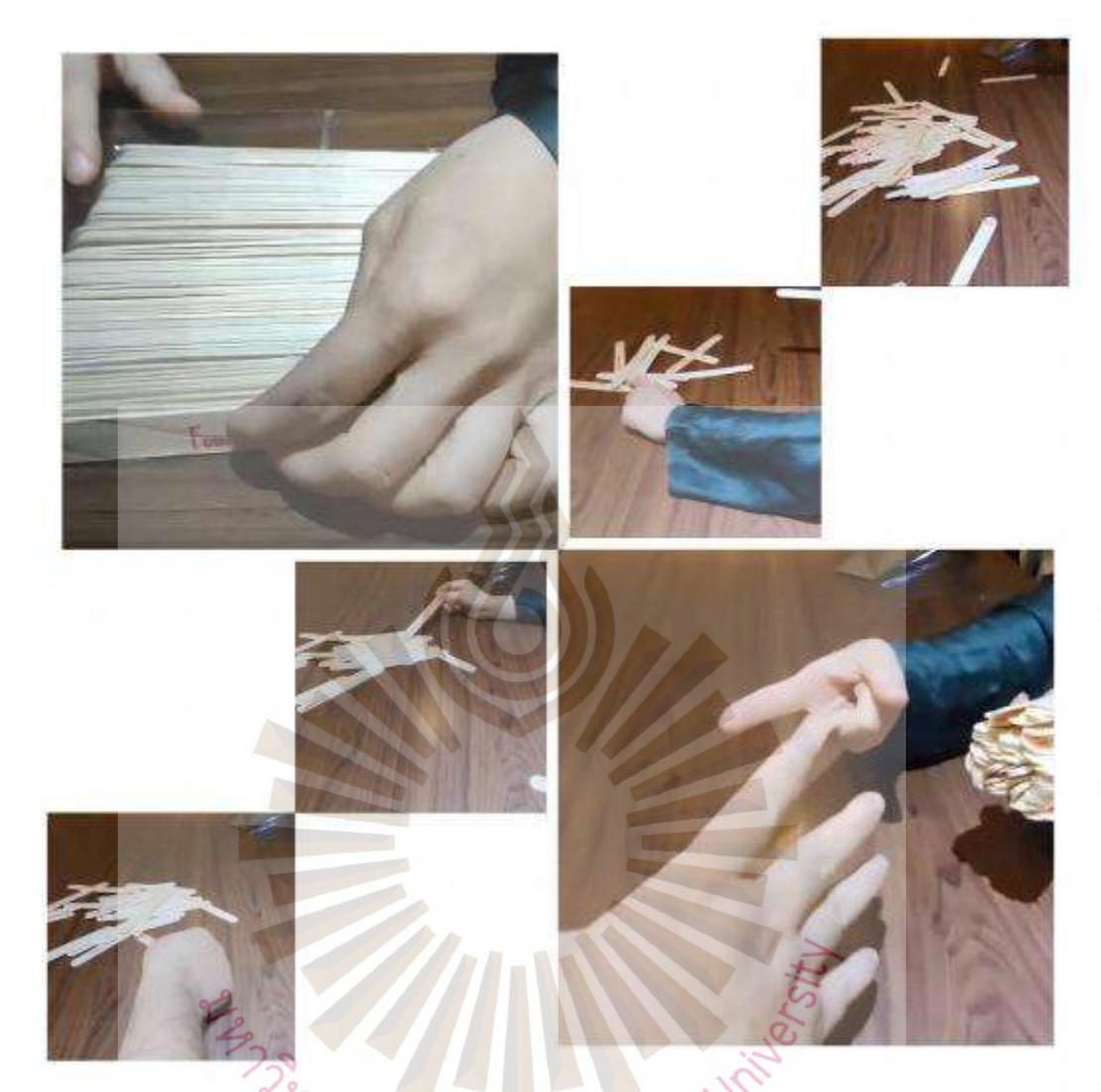
Figure 4.5   Game Experiment

Shortcoming:

It is very troublesome to find items based on numbers only.

Second version:

      1) Choose solid color wooden sticks, 60 sticks, remove the number

      2) Write in different colors, 10 sticks for each color

      3) The characteristics of items   are distinguished by taste, plants, materials, functions, etc.
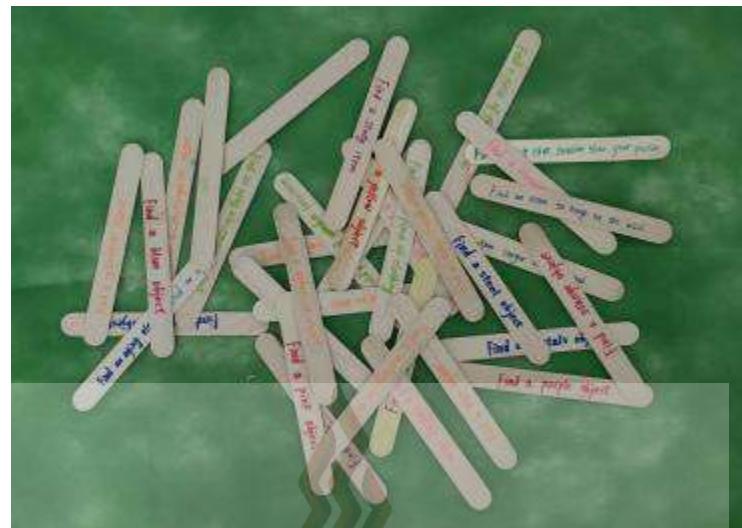
Figure 4.6   Color Distinction

Disadvantages: The distinction is not obvious

Third version:

1) Choose colored wooden sticks, 60 sticks, 10 sticks of each color

2) Items are classified according to color, size, material function, shape, and environmental protection. There are 10 items in each category.
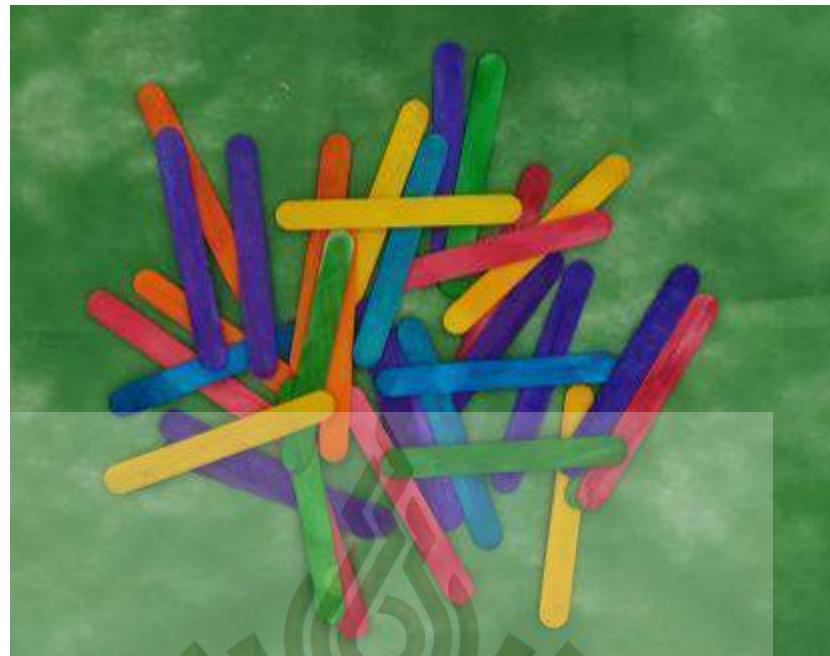
Figure 4.7   Replace Material

Disadvantages: Dark wooden sticks, unclear font.

as the picture shows

Figure 4.8   Color Comparison

Fourth version:

1) Select colored wooden sticks, remove dark colors and add solid colors

2) 60 pieces in total, 10 pieces of each color

3) Items are classified according to color, size, material, function, shape and environmental protection. There are 10 items in each category.

Figure 4.9   Material Confirmed (1)

Figure 4.10   Material Confirmed (2)

4.3 Finished Design

Figure 4.11   Final Shape

Item characteristics classification:

| a set of functions:	A set of recyclable items:	A set of sizes:
Find a cooking item	Find a book you no longer use	Find a stuff that smaller than your palm
Find a fitness item	Find an abandoned metal can	Find a smallest stuff you have
Find a study item	Find a torn piece of clothing	Find an item that is no taller than your height
Find an environmentally friendly item	Find a plastic container to throw away	Find an item to hang on the wall
Find a medical item	Find an aging electronic product	Find an item that is the largest you can move
Find a gardening tool	Find a damaged rubber item	Find an item you can take with you
Find a piece of art	Find a packaging box for express delivery	Find an item that is the same size as your phone
Find something to protect you from the cold	Find an old piece of wooden furniture	Find an item larger than the bed
Find a sunscreen item	Find an expired household appliance	Find an item that is taller than the chair
Find a cleaning item	Find a piece of rusty metal	Find an item put it sitting in a drawer

Figure 4.12   Item Classification (1)

A set of colors:	A set of materials:	A set of shapes:
Find a white object	Find a plastic object	Find a round object
Find a blue object	Find a silk object	Find a flat object
Find a red object	Find a wood object	Find a rectangular object
Find a green object	Find a paper object	Find a cylindrical object
Find a black object	Find a ceramics object	Find an irregular item
Find a yellow object	Find a steel object	Find a square item
Find a purple object	Find a metals object	Find an oval-shaped object
Find a orange object	Find a cotton object	Find a triangular object
Find a cyan object	Find a glass object	Find a spherical object
Find a pink object	Find a rubber object	Find a cube object

Figure 4.13   Item Classification (2)

Figure 4.14   Item Classification (3)

4.4   Set the Rules of the Game

Produce name: Find Object Game
——Games for hoarders

game rules:

1: Forward clockwise
2: Scissors, Rock, paper, two out of three.
Winner first start
3: Players hold the gathered sticks in their hands, suspended in the air, and then suddenly let go, the sticks naturally scattered randomly on the table.
4: The player can only pick up one stick at a time and cannot touch other sticks.
5: The player touches another stick, fails, turns to the next player, and so on.
6: When all sticks have been removed, the player with the most sticks wins.
7: In the same color for a cycle. When the 10 sticks of the same color are picked first, the winning player can ask others to complete the task written on the selected stick, either individually or jointly. And so on
9: When the task on the removed stick is completed, the second cycle begins.
10: The rules of the second round are the same as above. Until all tasks on the stick are completed.

Mikado: craft wood   Size: 1.8 ×15cm

Figure 4.15   Final Product (1)

Figure 4.16   Final Product (2)

Figure 4.17   Final Product (3)

Game Specifications: Find the Object Adventure

Game Mode: 2-4 players

Recommended Age: 7 years and above

Game Components:

Number of Objects: 60

Object Dimensions: 1.8 x 15 cm

Game Duration: 30 to 60 minutes

Overview:

Embark on an exciting journey with the "Find Object Game," Dive into the
challenge of discovering 60 unique objects, each measuring 1.8 x 15 cm.

Objective:

The players engage in a thrilling quest to locate and identify specific objects within the allocated time. With a duration ranging from 30 to 60 minutes, the game promises an immersive and enjoyable experience for participants of all ages.

Note:

The "Find Object Game" combines excitement and cognitive skills, making it an ideal choice for family gatherings, parties, or casual game nights. Get ready for an immersive adventure filled with suspense, strategy, and the joy of discovery!

Here are the rules of the game:

1) Players move in a clockwise direction.

2) Players engage in a Rock, Paper, Scissors match, with the winner initiating the first move. The victor eliminates two sticks of their choice.

3) Players hold a collection of sticks in their hands, suspending them in the air, and then release them. The sticks fall randomly on the table.

4) Participants can only pick up one stick at a time without touching any other sticks.

5) A player touches another stick without causing others to move. Failure results in turning the play over to the next participant.

6) The player with the most sticks after all sticks are removed emerges as the winner.

7) Sticks are arranged in cycles of the same color. When all 10 sticks of a color are removed, the player with the highest quantity can request others to individually or collectively perform tasks indicated on the removed sticks.

8) Once tasks on the removed sticks are accomplished, the second cycle begins.

9) The rules of the second cycle are identical to the first.

10) The game continues until all tasks on the sticks are completed.

Chapter 5

Conclusion And Recommendations

5.1 Conclusion

Innovative Approach to Hoarding Disorder Treatment through Game Design, Re-Determine the Relationship Between People-Things-Space.

This thesis outlines my thoughts and methods during the design process. Design is the solution to the problems we encounter, a theme established through our contemplation of the work. From background research, it is evident that hoarding tendencies persist around us, with the ongoing consumer interest leading to an accumulation of items such as clothing, toys, cosmetics, tools, shoes, and a continuous influx of updated electronic products. The quantity of similar-function products unknowingly increases, and the invisible online hoarding has also become prevalent. Yet, people remain indifferent to these concerns, often unaware of the severe consequences. This is an unknown topic, relatively unexplored.

The aim of this game is to assist individuals with hoarding tendencies in learning how to categorize, discard, retain, donate, sell, and organize their belongings. By reducing the quantity of items, we aim to expand living spaces, achieving a harmonious balance between people, possessions, and space. The game fosters problem-solving skills, enabling hoarders to explore solutions, experiment continuously, immerse themselves in the gameplay, elevate their mood, and alleviate anxiety. The collaborative nature of the game, involving trusted family and friends, signals a positive step towards social integration.

This game is a classic and enjoyable transformative experience. It is not limited to children and has no age requirements, physical or mental exertion. The rules are simple and straightforward, distinguished by different colors that represent various items. The game is easily learned, requires minimal space (just a table), and is lightweight and cost-effective. Materials are readily available for DIY creation, and its portability makes it exceptionally convenient. This simple organizational method allows for unlimited game time, encouraging individuals with hoarding tendencies to discard items more frequently. Moreover, it aligns with the widely practiced therapeutic method of exposure therapy internationally.

In summary, this innovative game design serves as a novel approach to treating hoarding disorder, promoting logical coherence and accurate expression of ideas.

5.2 Recommendations

The game serves as a novel intervention, an attempt to address hoarding disorder. In reality, awareness of hoarding disorder is limited to a small fraction of the population, including a handful of professionals, patients' family members, and friends. However, the game brings people together. It is a means of gathering individuals, fostering hope that, through the game, more people will become aware of and attentive to this issue.

While the game is a step towards early prevention, the understanding of hoarding disorder remains confined to a niche group. The primary audience includes a subset of individuals and professionals who are directly involved with patients. Therefore, there is an opportunity to broaden awareness through the game, instilling a sense of early prevention. Increasing awareness and understanding of this mental health condition can contribute to rational consumption and liberation from material constraints. Ultimately, the goal is to collaboratively create a better social environment.

In summary, the game, while having limitations, presents a unique avenue for raising awareness and fostering early prevention efforts. This comprehensive approach can contribute to a more nuanced understanding and treatment of hoarding disorder.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.978089042559

Bulli, F., Melli, G., Carraresi, C., Stopani, E., Pertusa, A., & Frost, R. O. (2014). Hoarding behaviour in an Italian non-clinical sample. *Behavioural and cognitive psychotherapy, 42*(3), 297–311. https://doi.org/10.1017/S1352465812001105

Christiana, B., Gail, S., JoAnn, D., Carole, C., Randy, O. F., & David, F. T. (2019). Should I Keep It? Thoughts Verbalized During a Discarding Task. *Cognitive Therapy and Research, 43,* 1075-1085.

David, F. T., Hannah, C. L., Bethany, M. W., Lauren S. H., & Michael C. S. (2018). Hoarding disorder and difficulties in emotion regulation. *Journal of Obsessive -Compulsive and Related Disorders,16,* 98-103. https://doi.org/10.1016/j.jocrd.2018.01.006

David, J., Crone, C., Norberg, M. M. (2022). A critical review of cognitive behavioural therapy for hoarding disorder: How can we improve outcomes? *Clinical Psychology & Psychotherapy, 29*(2), 469-488. https://doi.org/10.1002/cpp.2660

Dozier, M., Taylor, C., Castriotta, N., Mayes, T., & Ayers, C. (2017). A preliminary investigation of the measurement of object interconnected-ness in hoarding disorder. *Cognitive Therapy and Research, 41*(5), 799–805. https://doi.org/10. 1007/s10608-017-9845-x

Duenwald, M. (2004, January). The Psychology of...Hoarding. What lies beneath the pathological desire to stockpile tons of stuff? *Discover magazine.* Retrieved from https://www.discovermagazine.com/mind/the-psychology-of-hoarding

Emily H., Anna S., & Susan, D. (2017). Transitions and turning points revisited: A replication to explore child maltreatment and youth offending links within and across Australian cohorts. *Child Abuse & Neglect, 65,* 24-36. https://doi.org/10.1016/j.chiabu.2017.01.002

Fromm, E. (1947). *Man for himself: An inquiry into the psychology of ethics.* New York, NY: Rinehart.

References (continued)

Frost, R. O., Meagher, B. M., & Riskind, J. H. (2001). Obsessive-compulsive features in pathological lottery and scratch-ticket gamblers. *Journal of gambling studies, 17*(1), 5–19. https://doi.org/10.1023/a:1016636214258

Frost, R. O., Ruby, D., & Shuer, L. J. (2012). The Buried in Treasures Workshop: waitlist control trial of facilitated support groups for hoarding. *Behaviour research and therapy, 50*(11), 661–667. https://doi.org/10.1016/j.brat.2012.08.004

Frost, R. O., Steketee, G., & Tolin, D. F. (2012). Diagnosis and assessment of hoarding disorder. *Annual Review of Clinical Psychology, 8*, 219–242.

Fullana, M. A., Mataix-Cols, D., Caseras, X., Alonso, P., Manuel Menchón, J., Vallejo, J., & Torrubia, R. (2004). High sensitivity to punishment and low impulsivity in obsessive-compulsive patients with hoarding symptoms. *Psychiatry research, 129*(1), 21–27. https://doi.org/10.1016/j.psychres.2004.02.017.

Herring, S. (2011). Collyer Curiosa: A Brief History of Hoarding. *Criticism, 53*(2), 159-188. doi:10.1353/CRT.2011.0012

Hideko, Y. (2019). *Dan Sha Ri*. Retrieved from https://read.douban.com/ebook/111488030/

Iervolino, A. C., Perroud, N., Fullana, M. A., Guipponi, M., Cherkas, L., Collier, D. A., & Mataix-Cols, D. (2009). Prevalence and heritability of compulsive hoarding: a twin study. *The American journal of psychiatry, 166*(10), 1156–1161. https://doi.org/10.1176/ appi.ajp.2009.08121789

Jägholm, S., Lindstedt, S., Andersson, E., Mataix-Cols, D., Fernández de la Cruz, L., Rück, C., & Ivanov, V. Z. (2023). Study protocol for a randomized controlled trial of in-home decluttering augmentation of group cognitive-behavioral therapy for hoarding disorder: the Joining Forces Trial. *Trials, 24*, 483. https://doi.org/10.1186/s13063-023-07509-4

Jessica, R. G, Randy, O. F, Gail, S, Hyo-Jin, K., & Sarah, H. (2005). Age of onset of compulsive hoarding. *Journal of Anxiety Disorders, 20*(5), 675-686. https://doi.org/10.1016/j.janxdis.2005.07.004

References(continued)

Kim, H. J., Steketee, G., & Frost, R. O. (2001). Hoarding by elderly people. *Health & Social Work, 26*(3), 176– 184.

Leckman, J. F., Mataix-Cols, D., & do Rosario-Campos, M. C. (2005). Symptom dimensions in OCD: Developmental and evolutionary perspectives. *In Concepts and controversies in obsessive-compulsive disorder* (pp. 3–25). New York, NY: Springer.

Levy, H., Frost, R., Offermann, E., Steketee, G., & Tolin, D. (2019). A comparison of cognitive restructuring and thought listing for excessive acquiring in hoarding disorder. *Cognitive Therapy and Research, 43*(6), 1065- 1074. https://doi.org/10.1007/s10608-019-10022-1

Levy, H.C., Worden, B.L., Gilliam, C. M., D'Urso, C., Steketee, G., Frost, R.O., & Tolin, D. F. (2017). Changes in saving cognitionsmedi- ate hoarding symptom change in cognitive-behavioral therapy for hoarding disorder. *Journal of Obsessive-Compulsive and Related Disor-ders, 14*, 112-118. https://doi.org/10.1016/j.jocrd.2017.06.008

Litvin, B., Sardana, S., Riemann, B. C., Verdeli, H., & McNally, R. J. (2022). A network examination of symptoms of obsessive-compulsive disorder and sleep disturbances. *Journal of Obsessive- Compulsive and Related Disorders, 35*, Article 100755.

Marie K. (2012). *The heart-pounding magic of life sorting.* Retrieved from https://book.douban.com/subject/10747883

Mueller, A., Mitchell, J. E., Crosby, R. D., Glaesmer, H., & de Zwaan, M.(2009). The prevalence of compulsive hoarding and its association with compulsive buying in a German population-based sample. *Behaviour Research and Therapy, 47*(8), 705–709.

References(continued)

Nordsletten, A. E., Reichenberg, A., Hatch, S. L., Fernández De La Cruz, L., Pertusa, A., Hotopf, M., & Mataix-Cols, D. (2013). Epidemiology of hoarding disorder. *British Journal of Psychiatry*, *203*, 445–452. https://doi.org/10.1192/bjp.bp.113.130195

O'Sullivan, S. S., Djamshidian, A., Evans, A. H., Loane, C. M., Lees, A. J.,& Lawrence, A. D. (2010). Excessive hoarding in Parkinson's disease. *Movement Disorders*, *25,* 1026- 1033.

Postlethwaite, A., Kellett, S., & Mataix-Cols, D. (2019). Prevalence of Hoarding Disorder: A systematic review and meta-analysis. *Journal of affective disorders, 256*, 309–316. https://doi.org/10.1016/j.jad.2019.06.004.

Rasmussen, S. A., & Eisen, J. L. (1992). The epidemiology and clinical features of obsessive compulsive disorder. *Psychiatric Clinics of North America*, *15*(4), 743–758.

Sica, C., Ghisi, M., Altoè, G., Chiri, L. R., Franceschini, S., Coradeschi, D., & Melli, G. (2009). The Italian version of the obsessive compulsive inventory: Its psychometric properties on community and clinical samples. *Journal of Anxiety Disorders*, *23*(2), 204–211.

Snowdon, J., & Halliday, G. (2009). How and when to intervene in cases of severe domestic squalor. *International Psychogeriatrics, 21*(6), 996–1002. doi:10.1017/S104161 0209990597

Stanton, C. H., & Worden, B. (2023). Two Case Examples of Cognitive Behavioral Treatment for Hoarding Disorder. *Journal of Cognitive Psychotherapy, 37*(4). https://doi.org/10.1891/JCP-2022-0009

Steketee, G., & Frost, R. O. (2006). *Compulsive hoarding and acquiring:Therapist guide (treatments that work)*. New York, NY: Oxford University Press.

Steketee, G., & Frost, R. (2007). *Compulsive Hoarding and Aquiring: Therapist Guide.* New York, NY: Oxford University Press.

References(continued)

Steketee, G., Frost, R. O., & Kyrios, M. (2003). Cognitive aspects   of compulsive hoarding. *Cognitive Therapy and Research*, *27*(4), 463–479.

Steketee, G., Frost, R. O., Wincze, J., Greene, K. A. I., & Douglass, H. (2000). Group and individual treatment of compulsive hoarding: A pilot study. *Behavioural and Cognitive Psychotherapy*, *28*(3), 259–268.

Stephan, K. E., Weiskopf, N., Drysdale, P. M., Robinson, P. A., & Friston, K. J. (2007). Comparing hemodynamic models with DCM. *NeuroImage, 38*(3), 387 –401. https://doi.org/10.1016/j. neuroimage.2007.07.040

Stewart, S. E., Rosario, M. C., Brown, T. A., Carter, A. S., Leckman, J. F., Su khodolsky, D., … Pauls, D. L. (2007). Principal components analysis of obsessive-compulsive disorder symptoms in children and adolescents. *Biological Psychiatry*, *61*(3), 285–291.

Taguchi, H. L. (2016). Deleuzo-Guattarian Rhizomatics: Mapping the Desiring Forces and Connections between Educational Practices and the Neurosciences. In C. A. Taylor & C. Hughes (Eds.), *Posthuman Research Practices in Education* (pp. 37-57). London: Palgrave Macmillan. https://doi.org/10.1057/9781137453082_4

Tolin, D. F., Frost, R. O., Steketee, G., & Fitch, K. E. (2008). Family burden of compulsive hoarding: results of an internet survey. *Behaviour Research and Therapy, 46,* 334-344.

Tolin, D. F., Frost, R. O., Steketee, G., Gray, K. D., & Fitch, K. E. (2008).The economic and social burden of compulsive hoarding. *Psychiatry Research*, *160*(2), 200–211.

Tolin, D. F., Levy, H. C., Hallion, L. S., Wootton, B. M., Jaccard, J., Diefenbach, G. J., & Stevens, M. C. (2023). Changes in neural activity following a randomized trial of cognitive behavioral therapy for hoarding disorder. *Journal of Consulting and Clinical Psychology, 91*(4), 242–250.https://doi.org/10.1037/ccp0000804.

References(continued)

Tompkins, M. A. (2011). Working with families of people who hoard: A harm reduction approach. *Journal of Clinical Psychology*, *67*(5), 497–506.

Van Roessel, P. J., Grassi, G., Aboujaoude, E. N., Menchón, J. M., Van Ameringen, M., & Rodríguez, C. I. (2023). Treatment-resistant OCD: Pharmacotherapies in adults. *Comprehensive psychiatry, 120*, 152352. https://doi.org/10.1016/j.comppsych.2022.152352

Wurm, S., & Schäfer, S. K. (2022). Gain- but not loss-related self-perceptions of aging predict mortality over a period of 23 years: A multidimensional approach. *Journal of personality and social psychology, 123*(3), 636–653. https://doi.org/10.1037/pspp0000412

Yap, K., Timpano, K. R., Isemann, S., Svehla, J., & Grisham, J. R. (2023). High levels of loneliness in people with hoarding disorder. *Journal of Obsessive-Compulsive and Related Disorders. 37*, Article 100806. https://doi.org/10.1016/j.jocrd.2023.100806

Yong, L., Jianzhi, C., Linting S., Zhaojun T., Xiaohui, L., & Meng, J. (2013). The Symptom, Diagnosis and Treatment for Hoarding Disorder. *Advances in Psychological Science, 21*(12), 2184-2195. doi:10.3724/SP.J.1042.2013.02184

Zakrzewski, J. J., Gillett, D. A., Vigil, O. R., Smith, L. C., Komaiko, K., Chou, C. -Y., . . . Mathews, C. A. (2020). Visually mediated functioning improves following treatment of hoarding disorder. *Journal of Affective Disorders, 264*, 310-317. https://doi.org/10.1016/j.jad.2019.12.030

Zhang, L., Ma, M., Li, D., & Xin, Z. (2020). The psychological typhoon eye effect during the COVID-19 outbreak in China: the role of coping efficacy and perceived threat. *Global Health, 16*, Article 105. https://doi.org/10.1186/s12992-020-00626-8

References(continued)

Zoldan, C. A., Stargell, N. A., & Kress, V. E. (n.d.). *Hoarding Disorder: A New Diagnosis in the DSM-5.* Retrieved from https://www.counseling.org/docs/default-source/practice-briefs/hoarding-disorder-a-new-diagnosis-in-the-dsm-5.pdf?sfvrsn=9956271a_1

Appendix

Play experiment

1. Awareness and Motivation

Question: Are items in your home that have gotten out of control and created obstacles to life that won't affect others?

Follow-up: Under what circumstances do you choose to discard items?

2. Current Practices

Question: About how often do you get rid of things you don't use?

Follow-up: Will all this discarding make your home any better?

3. Benefits and Challenges

Question: What are some of the reasons you've observed that people find it hard to discard?

Follow-up: What have you discovered in the process of discarding that can change these behaviors?

4. Environmental Impact

Question: Do you think hoarding won't cause family or other problems?

Follow-up: Can you provide specific experiments to support your claim?

5. Social engagement

Question: How important is social engagement in the treatment of hoarding disorder?

Follow-up: What steps have you taken to engage the community in these games?

6. Think outside the box

Question: What games have you found to be effective in changing the behavior of people with hoarding disorders?

Follow-up: Have you considered classic games that are easy to carry?

7. Choice of games

Question: What games do you think people with hoarding disorders would be interested in and willing to participate in?

Follow-up: How do you think these items could be improved to make them more disposable?

8. Rules of the game

Question: What role do you think setting the rules of the game has played in discarding items and generating interest?

Follow-up: What specific rules of the game do you think have helped people with hoarding disorders integrate into society and have significantly improved their behavior?

9. Economic factors

Question: Does the cost factor influence individuals or families with hoarding disorder to forgo treatment?

Follow-up: Do you think this low-cost game can be suitable for most cases and will get more families to try these measures for treatment?

10. Try something new

Question: What innovative attempts will be made in the future to improve the living environment or the psychological status of individuals with hoarding disorders?

Follow-up: What do you think about the use of game participation in therapeutic attempts? Will it persist for a long time in the future?

Biography

Name	Rongfeng Yao
Date of birth	April 17, 1978
Place of birth	Henan Province, China
Education background	Nanjing Normal University
	Chinese Language Studies, 2017
	Rangsit University
	Master of Fine Arts in Design, 2024
Address	Suzhou City, Jiangsu Province, China
Email Address	1244732542@qq.com