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심리학석사학위논문

Two Types of Hoarding Behavior

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Abstract

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Hoarding is a phenomenon that has recently gathered intense attention. Recent researches produced numerous conflicting results, along with the consensus that hoarding may be a complex and heterogeneous syndrome. However, current classification methods on hoarding behavior are limited to comorbidities and onset-related features. This study aims at proposing a new model that divides hoarding behaviors into two; Type I and II. Type I refers to acquisition and difficulty discarding perpetuated through gaining and retaining positive emotion and attachment. Type II behavior refers to acquisition and difficulty discarding performed to avoid negative emotions or events.

In Study 1, responses from 390 college students were analyzed to validate the Korean version of Beliefs about Hoarding Questionnaire (BAH), which is a self-report measure assessing beliefs and experiences related to hoarding. Three subfactors were extracted from exploratory factor analysis. The first factor, Attachment Disturbance reflects beliefs of being attached to objects and is related to Type I hoarding behavior. The other two factors, Fear of Material Deprivation and Harm Avoidance, measure hoarding beliefs of avoiding negative outcomes, therefore connected to Type II. The

Korean version of BAH had excellent internal consistency and an acceptable test-retest reliability. The differences in anxiety-related features and impulsivity, sentimentality and satisfaction with life were compared between two groups of participants differing in dominant beliefs related to hoarding. As a result, Type I group reported higher levels of sentimentality and satisfaction with life than Type II group, whereas Type II group had higher levels of sensitivity to punishment, anxiety sensitivity and worrying than Type I group.

Study 2 explored the differences in cognitive evaluation and emotional experiences among two groups of subclinical hoarders and a control group. Participants were assigned to groups depending on their beliefs related to hoarding. They read about imaginary situations in which they acquire an item and lose or discard it inevitably. After reading each script, they evaluated their feelings and the likelihood of negative events related to the item happening in the future. As a result, Type II hoarders experienced stronger relief upon item acquisition and more anxiety when losing the item than Type I hoarders did.

The results of the studies support the heterogeneity in hoarding and suggest that there may be distinct groups of hoarders, which may account for the mixed results often produced in hoarding studies. Finally, the implications and limitations of this study, and suggestions for future studies were discussed.

Key words: Hoarding Behavior; BAH; Subtypes of Hoarding

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Introduction

Gathering and reserving items are behaviors naturally observed among animals. For instance, squirrels gather nuts and save them to survive winter, when food sources become scarce. When it comes to saving behavior, people show a somewhat different pattern, ranging from normative saving behavior to debilitating hoarding behavior at the end of the continuum. The hoarding behavior is characterized by persistent difficulty of discarding and clutters in living spaces, which often result in distress.

In the past, hoarding behavior was often considered as an eccentricity in one's personality. *Diagnostic and Statistical Manual of Mental Disorders, the Fourth Edition* (DSM-IV; American Psychiatric Association, 1994) listed hoarding behavior as one of the symptoms found in obsessive-compulsive personality disorder (OCPD). Early assessment of hoarding was done through symptom checklist of obsessive-compulsive disorder (OCD). Since hoarding behavior was often found in patients with OCD, it was often referred to as 'compulsive hoarding.'

Although it had been observed for many centuries, hoarding has a relatively short history of scientific research. The first article on the matter (Frost & Gross, 1993) was published only two decades ago. They defined hoarding as "the acquisition of and failure to discard possessions that appear to be useless or of limited value". On the subsequent work, Frost and Hartl (1996) distinguished clinically significant hoarding behavior by including significant distress or inability to use living spaces for their purposes to the definition. With

a number of following research, recently, it has become a subject of great media interest as well as academic attention, resulting in immense influx of publications.

What captured academic and media attention were the interesting aspects of hoarding behavior. First of them was its high prevalence rate. Studies show that hoarding is widely prevalent (Mataix-Cols et al., 2010) in that clinically significant hoarding can be found in 2% to 5% of the population (Iervolino et al., 2009; Mueller, Mitchell, Crosby, Glaesmer, & de Zwaan, 2009; Samuels et al., 2008). Moreover, hoarding can cause health and safety consequences such as residential fires accounted for hoarded homes (Harris, 2010; Lucini, Monk, & Szlatenyi, 2009), and occupational and physical health complications as well (Tolin, Frost, Steketee, & Fitch, 2008).

As aforementioned, hoarding was thought to be related to OCD, but a large portion of people with hoarding problems show no other OCD symptoms. For example, in a study conducted by Frost, Steketee and Tolin (2011), only 18% out of 217 hoarding patients met diagnostic criteria for OCD. The same goes with the recent study of the epidemiology of hoarding in which most participants suffering from hoarding were classified as non-OCD (Samuels et al., 2008).

In accordance with the results of the previous research, finally in 2013, Hoarding Disorder (HD) was included in DSM-5 as an independent diagnostic criterion, reflecting its importance and distinctiveness. However, the diagnosis used for Hoarding Disorder only consists of behavioral signs, which implies that the group of 'hoarders' may not be a homogeneous of patients sharing common characteristics.

Concepts of Hoarding Disorder

Hoarding Disorder has been added as a distinct disorder in the newest revision of the diagnostic manual (American Psychiatric Association, 2013). The DSM-5 criteria are listed on Table 1. It includes three criteria that describe the symptoms (A, B, and C), one that specifies the level of distress or interference (D), and two exclusion criteria (E and F).

Table 1. *DSM-5 criteria for hoarding disorder (APA, 2013)*

A. Persistent difficulty discarding or parting with possessions, regardless of their actual value.
B. This difficulty is due to a perceived need to save the items and to distress associated with discarding them.
C. The difficulty discarding possessions results in the accumulation of possessions that congest and clutter active living areas and substantially compromises their intended use. If living areas are uncluttered, it is only because of the interventions of third parties (e.g., family members, cleaners, authorities).
D. The hoarding causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (including maintaining a safe environment for self and others).
E. The hoarding is not attributable to another medical condition (e.g., brain injury, cerebrovascular disease, Prader-Willi syndrome).
F. The hoarding is not better explained by the symptoms of another mental disorder (e.g., obsessions in obsessive-compulsive disorder, decreased energy in major depressive disorder, delusions in schizophrenia or another psychotic disorder, cognitive deficits in major neurocognitive disorder, restricted interests in autism spectrum disorder).
<i>Specify if</i>
With excessive acquisition: If difficulty discarding possessions is accompanied by excessive acquisition of items that are not needed or for which there is no available space.
<i>Specify if</i>
With good or fair insight: The individual recognizes that hoarding-related beliefs and behaviors (pertaining to difficulty discarding items, clutter, or excessive acquisition) are problematic.
With poor insight: The individual is mostly convinced that hoarding-related beliefs and behaviors (pertaining to difficulty discarding items, clutter, or excessive acquisition) are not problematic despite evidence to the contrary.
With absent insight/delusional beliefs: The individual is completely convinced that hoarding-related beliefs and behaviors (pertaining to difficulty discarding items, clutter, or excessive acquisition) are not problematic despite evidence to the contrary.

To specify, Criterion A indicates the essential characteristic of difficulty discarding which is not restricted to throwing things away only, but to letting go of any possession such as recycling, or selling it. In addition, their saving behavior is not confined to valuable items, but rather everything with, or without its value (Frost, Steketee, & Tolin, 2012). The items hoarded most frequently include clothes, newspapers, and magazines (Frost & Gross, 1993).

The second criterion refers to the nature of the hoarding behavior. People with HD save items not because of their laziness, but because of their intention to keep them and reluctance to discard. Specifically, the reasons to save things can be categorized into three (Frost, Hartl, Christian, & Williams, 1995). Some people hate to give things away since they put sentimental values on them. That is, hoarders have emotional attachments to an object which is relevant with a significant event, person, place, or time. The other reasons to save items are for their usefulness and for their intrinsic value, mostly, their aesthetic qualities.

Criterion C contains the consequence of difficulty discarding possessions on the living areas, that is, cluttered environment. This criterion shows that a person still can be diagnosed as HD even if help from others had the living place organized. The fourth criterion (D) clarifies clinically important distress or impairment in functioning. Research show that people with HD fail to function in various areas. The examples are inability to use living areas (Kim, Steketee, & Frost, 2001), impaired personal hygiene (Grisham, Frost, Steketee, Kim, & Hood, 2006; Kim et al., 2001), and dysfunctional family relationship (Tolin et al., 2008).

The exclusion criteria (E and F) cover that the hoarding

cannot be attributable to symptoms explained by another medical condition or mental disorder. For example, although 25% to 30% of people with OCD display hoarding symptoms, only a small number of individuals with OCD have clinically severe hoarding (Foa & Kozak, 1995, Mataix-Cols, Rauch, Manzo, Jenike, & Baer, 1999). As such, in many cases, hoarding behavior is a comorbid condition, but not the consequence of other disorder.

Heterogeneity Found in Hoarding Disorder

As hoarding disorder gained more attention in the research field since 1990s, myriads of research seeking after correlates of hoarding disorders. However, many of them produced incongruent reports on the properties of hoarders. For example, it was reported that harm avoidance, a concept which depicts anxious apprehension and exaggerated avoidance of potential harm (Summerfeldt, Kloosterman, Antony, Richter, & Swinson, 2004), does not play a role in hoarding symptoms (Ecker & Gönner, 2008) while another study claimed that harm avoidance is a key feature of hoarders, and that a significant difference in harm avoidance between hoarders and controls was found (Seaman, Oldfield, Gordon, Forrester, & Salkovskis, 2010). Another conflicting construct is anxiety sensitivity, a transdiagnostic concept which indicates fear of arousal-related sensations (Reiss & McNally, 1985). A group of researchers claimed that anxiety sensitivity is not correlated to hoarding symptoms except for excessive acquisition (Timpano, Buckner, Richey, Murphy, & Schmidt, 2009) while another group reported that anxiety sensitivity is correlated to all hoarding symptom dimensions and is a predictor

of hoarding symptoms (Medley, Capron, Korte, & Schmidt, 2013). One possible explanation for such mixed results is that there are different groups of hoarders who share common characteristics. If this is the case, differences in constitution of the participant samples may have caused those conflicting reports.

Hoarding behavior has been reported in a variety of disorders such as eating disorders (Frankenburg, 1984), schizophrenia (Luchins, Goldman, Lieb, & Hanrahan, 1992), organic mental disorders, and brain injury (Eslinger & Damasio, 1985). Also, social phobia and depression are reportedly associated with compulsive hoarding (Steketee, Frost, Wincze, Greene, & Douglass 2000). Correlation with heterogeneous mental disorders suggests that hoarding itself may be heterogeneous syndrome (Steketee & Frost, 2003).

Extant Classification of Hoarding

Several subtype studies have been conducted so far and some of them were classification based on comorbid states of hoarding disorder. A group of researchers attempted to classify patients with compulsive hoarding into two groups; one group of patients who also have OCD and the other group of 'pure hoarders' who demonstrate no OCD symptoms. (Grisham, Brown, Liverant & Campbell-Sills, 2005). In another study, patients with hoarding disorder were classified as three groups: pure hoarders, hoarders with depression, and hoarders with depression and attention deficit/hyperactivity disorder (Hall, Tolin, Frost, Steketee, 2013). It is also known that hoarders report traumatic experiences of the past significantly more often than those in the control group, and the experiences often were

associated with the symptom onset or aggravation period (Tolin, Meunier, Frost & Steketee, 2010). Based on the finding, a classification based on past trauma had been proposed. Kellett and colleagues suggested that there could be two distinct types of hoarders, traumagenic and characterological hoarders (Kellett, Greenhalgh, Beail, & Ridgway, 2010).

While the aforementioned previous subtype studies help us understand the characteristics of individuals with hoarding symptoms, the studies have apparent limitations. That is, they provide many of the classification research are only focused on the comorbidities of hoarding disorder, or mere classification of patients according to their symptom onset.

Proposal of a New Model

In order to draw closer to a classification with better clinical utility, the first step forward is to take a closer look at the hoarding symptom. As in Table 1, the diagnostic criteria for hoarding disorder are primarily based on behavioral symptoms. As stated earlier, hoarding may be a heterogeneous syndrome. However, it is very hard to distinguish hoarding behaviors caused by different reasons since they appear alike on the observed level. Then investigation of differences in cognitive and emotional attributes could be helpful.

The heterogeneity in emotional and cognitive disparities beneath the hoarding symptoms has been frequently reported. Some hoarders feel positive emotions including excitement, and fulfillment when they acquire items (Grisham & Barlow, 2005; Steketee & Frost, 2003), while some other patients reported that they get things

because they want to reduce negative emotions like anxiety and depression, and when they cannot acquire the item, some of them report fear or uncomfortableness (Tolin, 2010).

Also, hoarding patients differed on the reasons for not discarding items. While some could not give things away because they feel strong sentimental values on their possessions with attachment (Frost & Hartl, 1996; Steketee, Frost, & Kyrios, 2003), some others, especially those with traumatic experiences, could not let go of items in that they have a sense of safety when possessing items (Hartl, Duffany, Allen, Steketee, & Frost, 2005).

From the studies mentioned above, two distinct types of acquiring can be observed: one to gain positive feelings, and the other to lessen negative emotions and feel sense of safety. The acquiring behaviors would be perpetuated by different mechanisms. Positive reinforcement for gaining positive feelings and negative reinforcement for reducing negative feelings. Two difficulties to discarding can be found as well: since they feel sentimentally attached from the object, or because item provides a sense of safety from possible harm. It is known that some hoarders build a quick liking to the item, and initial attachment is the most important predictor to the attachment formation (Grisham et al., 2009). Therefore, it is likely that positive feelings upon acquisition be paired with difficulty throwing away items due to attachment. It also seems plausible to pair acquisition behavior done in order to reduce negative emotions and difficulty throwing away due to its protection from negative emotions.

Then it is possible to divide hoarding behavior into two. There could be one type of hoarding behavior that saving things

Table 2. *Proposed Model: Differences in hoarding behavior*

	Type I	Type II
Function of Hoarding	attachment, positive feelings	harm avoidance sense of safety
Continuation Mechanism	positive reinforcement	lessen negative feelings negative reinforcement
Emotion upon Acquiring	excitement, fulfillment	reduction of anxiety and depression
Emotion upon Discarding	regretful/pitiful, sadness	anxiety, fear
Evaluation of Future Events	no bias	positive bias to negative events

bring positive feelings and attachment, while the other type is hoarding behavior that lessens negative feelings and provide the sense of safety. For the convenience, the words 'Type I' was chosen to indicate the hoarding behavior reaching for positive emotion and 'Type II' was selected in order to describe hoarding behaviors for avoidance of negative feeling. Table 2 displays differences in two types of hoarding behavior. Emotional responses to the loss of item would be anxiety-related emotions in Type II, since the object provided a sense of safety. For Type I, loss of an item would be losing a source of positive emotion, which would result in depression-related emotions. If the loss produces anxiety in a person, he would be positively biased to the occurrence of negative event. Therefore it can be predicted that a person may anticipate negative events more after the loss of an item if his hoarding behavior could be classified as a Type II behavior.

It has been previously mentioned that there have been mixed results regarding psychological constructs such as harm avoidance and anxiety sensitivity. The classification of hoarding behaviors can

provide better understanding of this phenomenon as well. The hoarders would be different in characteristics as their dominant hoarding behavior type differ. It can be assumed that hoarders who mainly demonstrate Type II hoarding behavior would feel more anxiety than ones from the other type. It can be predicted that 'Type II hoarders' are likely to report higher scores on anxiety-related constructs such as anxiety sensitivity, worries, as well as sensitivity to punishment, which is a concept similar to harm avoidance than those who mainly demonstrate Type I hoarding behaviors, 'Type I hoarders'. On the other hand, it can be assumed that Type I hoarders would be more sentimental than the other type. As they acquire items to feel positive emotions, it can be inferred that they would be more sensitive to rewards, resulting in higher impulsivity. Lastly, from the nature of their hoarding mechanism, Type I hoarders are likely to display better psychological functioning which would result in higher level of satisfaction with life. Table 3 summarizes the proposed model regarding the characteristic differences in two types of hoarders.

Table 3. *Proposed Model: dominant characteristics of a typical patient in each subtype*

	Type I	Type II
Sensitivity to punishment	Moderate	High
Anxiety sensitivity	Moderate	High
Worrying	Moderate	High
Impulsivity	High	Moderate
Sentimentality	High	Moderate
Satisfaction with life	High	Moderate

The Purpose of the Present Study

There have been great confusion regarding hoarding research due to heterogeneity of hoarders. The aim of the current study is to propose and verify the classification model of hoarding behaviors. To find evidences that support this model, explorations regarding the differences of the groups in terms of their characteristics, emotional experiences while acquiring and discarding items, and the cognitive evaluation of future events were made.

As a prerequisite to verifying the model, a tool that identifies what type of hoarding behavior a person usually demonstrates is needed. For this objective, a person's hoarding behavior can be captured through observing beliefs related to hoarding. To accomplish the goal, Study 1 was conducted to translate and validate the Beliefs about Hoarding Questionnaire (BAH; Gordon, Salkovskis, & Oldfield, 2013), a new self-report measure to assess beliefs and experiences related to hoarding. The 28-item questionnaire measures hoarding-related beliefs in three dimensions: harm avoidance/responsibility for harm, fear of material deprivation and attachment disturbance. Furthermore, Study 1 examined the differences in the groups with regard to personality aspects. Six psychological constructs on Table 3 were investigated to observe characteristics of the groups.

In Study 2, the differences between the groups in the cognitive judgments and emotional experiences in hoarding-related situations were investigated. Subclinical hoarders imagined the situations where they acquire and discard items. Afterwards, they reported their emotions and cognitive evaluation of the events.

Study 1. Validation of the Korean Version of the Beliefs about Hoarding Questionnaire and exploration of differences between two groups with different hoarding beliefs

The purpose of Study 1 was to validate the Korean version of Beliefs About Hoarding questionnaire. To observe the validity of the scale, scales that measure psychological constructs associated with hoarding beliefs were also administered to participants. The factor structure was examined using exploratory factor analysis.

Secondly, group comparison between groups differing in hoarding beliefs was performed. Dependent Variables were anxiety sensitivity, sensitivity to punishment, worrying, impulsivity, sentimentality and satisfaction with life. Based on the model, the following hypotheses were established.

Hypothesis 1. Type II group will report higher levels of sensitivity to punishment, worry, and anxiety sensitivity than Type I group will.

Hypothesis 2. Type I group will report higher levels of impulsivity, sentimentality, and satisfaction with life in comparison to Type II group will.

Method

Participants

A total of 400 college students participated in the survey. 309 of them were taking psychology courses at Seoul National University during the fall semester of 2014. Students completed the survey on the internet through a research participation system managed by the Seoul National University Psychology department (R-Point system). 91 students were recruited through school online community, SNULife. A small set of participants ($n = 10$; 2.5% of cases) had taken irregularly short time to respond to the survey. The responses of those participants were removed, therefore leaving 390 participants (43.8% male; 171, 56.2% female; 219). The participants ranged in age from 17 to 32. ($M=20.73$, $SD=2.37$). Among the participants, 41 of them took the Beliefs About Hoarding questionnaire again after a 4-week-interval for assessment of test-retest reliability.

Measures

Beliefs about Hoarding Questionnaire (BAH). The BAH is a self-report measure to assess beliefs and experiences characteristic of hoarding (Gordon et al., 2013). This is comprised of 28 items with three subscales: hoarding motivated by harm avoidance or responsibility for harm, hoarding motivated by previous experience of material deprivation and hoarding related to attachment disturbance. Participants responded on a scale from 0 to 100, where 0 indicates 'I

did not believe this at all' and 100 indicates 'I was completely convinced this idea was true. The "harm avoidance" subscale has six items(items 6, 12, 21, 24, 25, 28), the "material deprivation" subscale has nine items(items 1, 5, 7, 10, 13, 15, 18, 23, 27), the "attachment disturbance" subscale has twelve items(items 2, 3, 4, 8, 11, 14, 16, 17, 19, 20, 22, 26) and one item representing the positive emotion associated with acquiring (item 9: 'It feels exhilarating and very exciting to get new items to add to my things'). The internal consistency coefficient of BAH was excellent as a whole (Cronbach's $\alpha=.96$; Gordon et al., 2013).

With permission from one of the developers (Olivia M. Gordon), the author initially translated the items into Korean. A licensed clinical psychologist examined the validity of the translated items. The questionnaire was then reexamined by a professor of clinical psychology. The items were modified so that sentences seem natural to Korean readers.

Saving Inventory-Revised (SI-R). This is the Korean version of the Saving Inventory-Revised (Hyeon, 2014; Frost, Steketee & Grisham, 2004). It is the self-report measure widely used in order assess severity of hoarding symptoms. It contains 18 items with three subscales: Difficulty discarding (items 1, 2, 3, 9, 12, 13, 18), Clutter (items 5, 10, 14, 15, 16), and Acquisition (items 4, 6, 7, 8, 11, 17). Participants rated all items on a scale ranging from 0 (disagree very much) to 4 (agree very much). The internal consistency of SI-R was previously reported as .91. (Hyeon, 2014) In this study, the consistency of total SI-R score was good (Cronbach's $\alpha=.89$).

Obsessive Beliefs Questionnaire-20 (OBQ-20). This scale is the Korean version of Obsessive Beliefs Questionnaire (Min, 2000;

OCCWG, 2005), a self-report measure of the OCD-relevant dysfunctional beliefs. In this study, a shortened version was used. OBQ-20 is a short form of the Obsessive Beliefs Questionnaire (Moulding et al., 2011). The 20-item OBQ loads on four domains represented by 5 items each: (1) Inflated Responsibility (“If I don’t act when I foresee danger, then I am to blame for consequences”); (2) Threat Overestimation (“Even when I am careful, I often think bad things will happen”); (3) Perfectionism/Uncertainty (“For me, things are not right if they are not perfect”); and (4) Importance/Control of Thoughts (“Having bad thoughts means I am weird or abnormal”). Participants were asked to rate the degree of belief for each item on a scale from 1 (strongly disagree) to 7 (strongly agree). The internal consistency of the scale as a whole was good (Cronbach’s $\alpha=.89$.)

Obsessive-Compulsive Inventory-Revised (OCI-R). This is the Korean version of Obsessive-compulsive inventory-revised (Lim, 2007; Foa et al, 2002), an 18-item self-report questionnaire that assesses a broad range of obsessive and compulsive symptoms. The 18-item OCI-R loads on six domains represented by 3 items each: (a) washing, (b) checking, (c) ordering, (d) obsessing, (e) hoarding, and (f) neutralizing. Participants rated all items on a scale ranging from 0(not at all) to 4 (extremely). Lim(2007) reported good internal consistency (Cronbach’s $\alpha=.90$). In this study, the internal consistency of the scale was .89.

State Trait Anxiety Inventory, Trait Version (K-STAI-T). This is the Korean version of the State Trait Anxiety Inventory (Kim, 1978; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1970), a 40-item questionnaire that assesses two aspects of anxiety: the

temporary and episodic form of anxiety, and the stable personality traits. In this study, only trait version, which measures individual differences in anxiety as a personality trait, was used. Each item is rated on a 4-point scale from 1 (not at all) to 4 (very much so). The internal consistency (Cronbach's α) of the trait scale used in this study was .91.

The Center for Epidemiological Studies Depression Scale (CES-D). This is the Korean version of the Center for Epidemiological Studies Depression Scale (Chon, Choi, & Yang, 2001; Radloff, 1977). CES-D is a self-report measure assessing the frequency of depressive symptoms. The abbreviated form of CES-D developed by Cole, Rabin, Smith, & Kaufman (2004) is used in this study. The scale consists of 10 items (Cronbach's $\alpha=.87$) with responses ranging from 0 (rarely) to 3 (most or all of the time). Participants were asked to respond how frequently they have experienced symptoms associated with depression (e.g., "I did not feel like eating, my appetite was poor") over the past week. The shortened CES-D had Cronbach's alpha of .85 in the present study.

Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ). Sensitivity to Punishment was assessed by means of the Korean version of Sensitivity to Punishment and Sensitivity to Reward Questionnaire (Kim & Yi, 2010; Torrubia, Avila, Moltó, & Caseras, 2001). The SPSRQ is a 48-item questionnaire which consists of two subscales: Sensitivity to Punishment (SP) and Sensitivity to Reward (SR). In this study, only 24 items of SP subscale was used. Sensitivity to Punishment assess individual differences in the Behavioral Inhibition System (BIS) which promotes avoidance behavior and anxiety since it is sensitive to

signals of punishment and frustrative non-reward. The items refer to passive avoidance in general situations involving the possibility of aversive consequences, and worry or cognitive processes produced by the threat of punishment or failure (Torrubia et al., 2001), for example: 'Do you think a lot before complaining in a restaurant if your meal is not well prepared?' The internal consistency (Cronbach's α) of SPSRQ (SP only) was .81, (Kim & Yi, 2010) and .89 in the present study.

Anxiety Sensitivity Index-3 (ASI-3). The ASI-3 is an 18-item self-report measure assessing the tendency to fear symptoms of anxiety based on the belief that they may have harmful consequences (Taylor et al., 2007). The scale has three subscales: fear of somatic sensations, fear of cognitive dyscontrol, and fear of socially observable symptoms of anxiety. Each item is rated on a 5-point Likert scale ranging from 0 (very little) to 4 (very much). In this study, the 18 items from the Korean version of the ASI-R (Kim et al., 2004) are used since the ASI-3 is a shortened form of ASI-R and no item has been modified. Reported internal consistency (Cronbach's α) of the ASI-R is .93 (Kim et al., 2004), and .90 for 18 items used as the ASI-3 in the present study.

Pennsylvania State Worry Questionnaire (PSWQ). This is the Korean version of the Pennsylvania State Worry Questionnaire (Kim, & Min, 1998; Meyer, Miller, Metzger, & Borkovec, 1990), a scale which measures pathological worry in both clinical and non-clinical populations. The PSWQ consists of 16 items on a five point scale (1=not at all typical of me, 5=very typical of me) and has been shown to correlate predictably with several psychological measures related to worry. The internal consistency coefficient of the PSWQ

was excellent, (Cronbach's $\alpha=.92$) with a coefficient alpha of .93 in the present study.

Short UPPS-P Impulsive Behavior Scale (UPPS-P). This is the Korean version of the UPPS-P Impulsive Behavior Scale (Jeon, 2011; Lynam, Smith, Whiteside, & Cyders, 2006). The UPPS-P Impulsive Behavior Scale is a 59-item self-report measure of five traits believed to fall under the umbrella of impulsivity. To relieve participant burden, a brief measure which uses 20 items had been recently developed (Cyders, Littlefield, Coffey, & Karyadi, 2014). Only 20 items included in the abbreviated version were used in the present study. The Negative and Positive Urgency scales assess an individual's difficulty in resisting cravings and urges when in a negative (e.g., "When I feel bad, I will often do things I later regret in order to make myself feel better now") or positive (e.g., "I tend to act without thinking when I am really excited.") affective state. (Lack of) Perseverance measures an individual's tendency to give up easily because of boredom, fatigue, or task difficulty (e.g., "I finish what I start"). (Lack of) Premeditation assesses an individual's tendency to fail to pause and deliberate before acting (e.g., "My thinking is usually careful and purposeful"). Lastly, Sensation seeking measures an individual's tendency to pursue activities that may be exciting, novel, or involves risk (e.g., "I quite enjoy taking risks."). The Cronbach's alphas of short UPPS-P (Cyders et al., 2014) ranged from .74 (Sensation Seeking) to .85 (Positive Urgency & Lack of Premeditation). In the current study, alphas ranged from .65 (Negative Urgency) to .78 (Lack of Premeditation). The internal consistency of all 20 items used in present study was acceptable ($\alpha= .75$).

Sentimentality Questionnaire (SQ). Sentimentality Questionnaire

was developed for this study in reference to Sentimentality and Nostalgia in Elderly People Questionnaire (Gergov & Stoyanova, 2013). It contains seven questions that ask participants' feelings of the past. Each item is rated on a scale with ranging from 1 (disagree) to 4 (strongly agree). The items are "The past is very important to me," "The past influences on the present and the future in my life," "I think of the past quite often," "What I felt in the past mostly accounts for what I feel at the moment," "I think the most important events in my life happened in the past," "What happened in the past inspires me about my future life," and "I am more sentimental than most people." The internal consistency of the questionnaire was acceptable (Cronbach's $\alpha=.78$).

Satisfaction with Life Scale (SWLS). This is the Korean version of Satisfaction with Life Scale (Cho, & Cha, 1998; Diener, Emmons, Larsen, & Griffin, 1985) which is a five-item scale designed to measure cognitive judgments of life satisfaction. Each item is rated on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sample items are "If I could live my life over, I would change almost nothing," and "My life is close to my ideal." The reported internal consistency of SWLS was .87 (Diener et. al., 1985) and the Korean version used in this study also had a Cronbach's alpha of .87.

Results

For validation of the Korean version of BAH, exploratory factor analysis, reliability analysis and correlation analysis were conducted. For exploratory factor analysis, CEFA (comprehensive exploratory factor analysis) Tool 3.04 was used. The validity of the translated BAH was inspected through its correlation with related factors: hoarding symptom, anxiety, depression, and obsessive thoughts. Then group comparison was performed to observe differences between participants with different hoarding beliefs. The psychometric features of the BAH, such as the mean score, standard deviation, skewness and kurtosis scores are summarized in Appendix A.

Exploratory factor analysis

The original study (Gordon et al., 2013) suggested three subscales for the BAH: attachment disturbance (items 2, 3, 4, 8, 11, 14, 16, 17, 19, 20, 22, 26), fear of material deprivation (items 1, 5, 7, 10, 13, 15, 18, 23, 27), and harm avoidance (items 6, 12, 21, 24, 25, 28). The results from factor analysis, however, were not reported in the original study. To enhance the scale's clinical utility and review its construct validity, exploratory factor analysis was performed.

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .916 and the result of Bartlett's test was $\chi^2(378, N=390)=4976.19$, $p<.001$. The sample was deemed suitable for factor analysis.

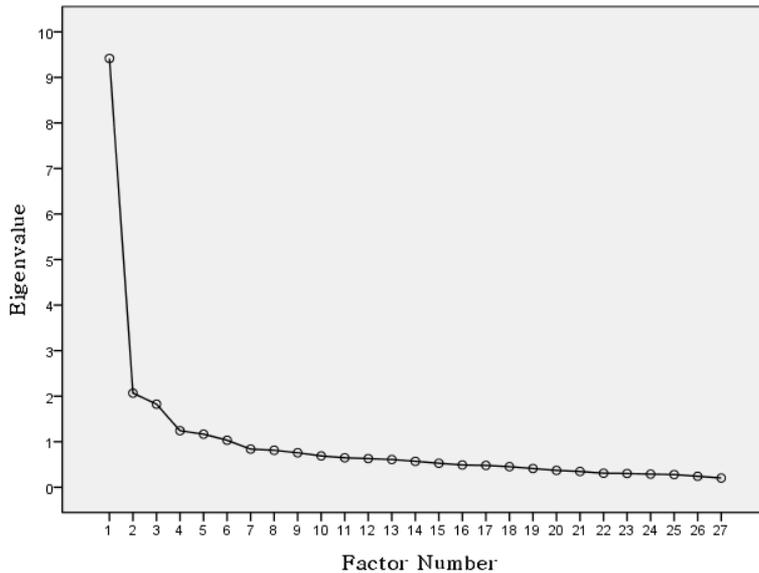


Figure 1. Scree plot of BAH.

Maximum likelihood extraction method was used in order to find the number of factors to extract. Item number 9 ('It feels exhilarating and very exciting to get new items to add to my things') was not included in the analysis because the item was not included in any subscale in the original questionnaire. The number of factors with Eigen value higher than 1 was 6, and the values were 9.42, 2.07, 1.83, 1.24, 1.17, and 1.03. From the scree plot represented on Figure 1 and assumptions made by the previous study (Gordon et al., 2013) 2 to 3 factors were regarded as appropriate.

The three-factor model had factor structure that reflects three subscales that authors presented in the original study. On the other hand, two-factor model consisted of a factor reflecting Attachment Disturbance items and the other factor which contained items from the two subscales of Harm Avoidance and Fear of Material

Deprivation. The model fits were tested using exploratory factor analysis program, (CEFA) with Oblique Varimax rotation method. The results indicated that two-factor model had a questionable model fit (RMSEA=.091), whereas three-factor model had a more appropriate fit (RMSEA=.074). Therefore, three-factor model was chosen for this study. Item number 5, 11, 14, and 25 were removed due to cross loadings (loading difference between factors was less than .1). Item number 2 and 22 were also removed since all of their loadings to the factors did not exceed .3.

The names of the factors were drawn from the original questionnaire. The first factor is comprised of 7 items that were ordinally from Attachment Disturbance(AD) subscale of the original BAH. The second factor contains 9 items which belonged to Fear of Material Deprivation(FMD) subscale. The last factor, Harm Avoidance(HA) has 5 items which evaluates beliefs of preventing harm related to discarding properties. The correlations between three factors were; .39 between AD and FMD, .42 between factor AD and HA, and .40 between FMD and HA. Each factor's correlation with the total score was .83, .86, and .79. Table 4 is the factor loading plot of each item in the Korean BAHQ.

Table 4. *Factor loading plot of BAH*

No.	Item	Factor		
		1	2	3
Factor 1. Attachment Disturbance				
03	내 물건들 중 많은 것들이 내게 소중한 사람들과 연결되어 있기 때문에, 그것들을 잃는 것은 매우 고통스러운 일일 것이다.	.79	.01	-.04
04	이걸 버리는 것은 내 일부를 버리는 것과 같다.	.73	.03	.08
08	이 물건은 내가 아는 누군가를 떠올리게 하기 때문에, 물건이 손상되도록 놔둘 수 없다.	.69	.06	.02

16	나는 내 물건들에서 다른 사람들이 발견할 수 없는 가치를 발견한다.	.40	.14	.14
17	이 물건을 버린다면 그것은 내 과거의 기억을 버리는 것과 같기 때문에 기분이 나빠질 것이다.	.68	.14	-.02
19	이걸 버리는 것은 사랑하는 사람을 버리고 떠나는 것과 같다.	.52	.00	.35
20	다른 사람들은 알 수 없더라도, 나는 내 물건들이 얼마나 가치 있는지 알 수 있다	.53	.19	.09

Factor 2. Fear of Material Deprivation

01	필요할 것이라는 아주 작은 가능성이라도 있다면 이것을 갖고 있어야 한다.	.22	.37	-.10
07	공짜로 주어지는 물건을 갖지 않는 것은 매우 안타까운 일이다.	-.21	.43	.19
10	이 물건의 쓰임새를 찾는 것은 나의 책임이다.	.06	.36	.20
13	이걸 버리면, 만약 필요한 상황이 왔을 때 매우 후회할 것이다	.16	.56	-.14
18	이걸 버리는 것은 낭비이기 때문에 나의 기분이 무척 나빠질 것이다.	.06	.41	.30
23	만약 언젠가 유용하게 사용될 수 있는 물건을 버렸다면, 나는 기분이 매우 나빠질 것이다.	-.05	.77	-.08
24	나는 이 물건을 버리는 것이 완벽하게 옳다고 느껴질 때에만 버릴 것이다.	.16	.56	-.02
26	내가 이 물건을 잘 관리하지 않으면 손상될 것이다	.03	.47	.07
27	잘 활용될 것이라는 확신 없이 이 물건을 버린다면, 기분이 나빠질 것이다.	.00	.58	.22

Factor 3. Harm Avoidance

06	나쁜 일이 일어나지 않게 하려면 이것을 가지고 있는 것이 중요하다.	.21	.19	.44
12	내가 이것을 보관하지 않으면, 이것은 누군가에게 해가 될 것이다.	.09	.07	.69
15	과거에 이 물건을 가졌더라면 감사하게 여겼을 것이기 때문에, 나는 이걸 갖고 있어야 한다.	.19	.22	.35
21	만약 이 물건에 안 좋은 일이 생긴다면, 그것은 물건과 연결된 누군가에게 위험이 닥칠 것이라는 뜻이다.	-.04	-.03	.78
28	이 물건을 버리면, 내게 소중한 사람에게 해로운 일이 생길까 봐 버리지 못하겠다.	.00	.02	.84

Analysis of Reliability, Concurrent/Divergent Validity and Criterion-Related Validity

The BAH's internal consistency was excellent (Cronbach's $\alpha = .93$). The internal consistency coefficient of each subscale was .87 for AD, .80 for FMD, and .83 for HA. The test-retest reliability of the scale was acceptable (.71 across 4 weeks).

The correlations between the BAH scores and CES-D, STAI-T, and OBQ were inspected in order to observe validity of the BAH. Table 5 is the correlation table of the scales used for the validity analysis. Firstly, the total score of the BAH and SI-R were moderately correlated ($r = .48, p < .01$), and all subfactors of two scales showed significant correlations. These correlations indicate that BAH validly assesses constructs related to hoarding criteria.

When put together with CES-D and STAI-T scores, BAH total score did not display a significant correlation with anxiety or depression. This finding may be attributed to the ego syntonic nature of hoarding disorder, which is often found in reports that many hoarders, especially those with less severe symptoms, do not experience clinically significant distress. The Fear of Material Deprivation subscale score demonstrated weak but significant correlation with trait anxiety.

The BAH total score and scores from three subscales had significant correlations with all subfactors of the OBQ, with Fear of Material Deprivation and Harm Avoidance subscales more strongly correlated to OBQ than Attachment Disturbance subscale. The differential correlation implies that the each subscale measures distinct types of beliefs related to hoarding behavior.

Table 5. *Correlation coefficients of BAH and related measures (N=390)*

	BAH Total	Factor 1: Attachment Disturbance	Factor 2: Fear of Material Deprivation	Factor 3: Harm Avoidance
SI-R	.48**	.38**	.45**	.35**
Difficulty Discarding	.54**	.49**	.47**	.38**
Clutter	.20**	.12*	.18**	.18**
Excessive Acquisition	.34**	.21**	.37**	.23**
CES-D	.08	.04	.09	.06
STAI-T	.09	.00	.12*	.07
OBQ	.37**	.24**	.34**	.39**
Threat	.31**	.16**	.30**	.36**
Responsibility	.32**	.24**	.30**	.30**
Importance of Thoughts/ Control of Thoughts	.27**	.21**	.20**	.27**
Perfectionism/ Intolerance of Uncertainty	.29**	.14**	.28**	.31**

Note. SIR= Saving Inventory-Revised, CES-D= Center for Epidemiological Studies Depression Scale, STAI-T= State Trait Anxiety Inventory, Trait Version, OBQ= Obsessive Beliefs Questionnaire
* $p < 0.05$. ** $p < .01$.

Group Comparison between Type I and Type II groups.

Based on the scores from three subscales of BAH, participants were assigned to two groups: Type I and Type II group. It was assumed that Attachment Disturbance would be related to Type I hoarding behavior, whereas Fear of Material Deprivation and Harm Avoidance are related to Type II hoarding behavior. As the participants who showed relatively higher score on AD subscale are

more likely to possess objects due to their excessive attachment, it can be assumed that their more dominant hoarding behavior would be Type I. Type II group comprised of participants with relatively higher ratings on FMD and HA subscale, which indicates that their hoarding behaviors are often connected to avoiding or preventing perceived harm.

As each subscale differ in means and variations, Z transformation was performed in order to make comparisons among the subscales. After the transformation, average of Z scores of FMD and HA subscales was subtracted from Z score of AD subscale. For the analysis, subjects whose Z score difference was larger than 0.5 (Type I) or smaller than -0.5 (Type II) were used. To exclude participants who has no hoarding symptoms from the analysis, only responses from participants with SI-R score higher than 16, which was the median in the whole sample, were admitted in the analysis.

Out of 390 participants, only 92 met the criteria stated above. Type I group had 48 participants (14 male; 32 female) ranging in age from 17 to 27 ($M=20.44$, $SD=2.12$). There were 44 participants (16 male; 28 female) assigned to Type II group, and their age ranged from 18 to 32 ($M=20.88$, $SD=2.82$). The measures used in the analysis were: the Anxiety Sensitivity Index-3 (ASI-3), the Pennsylvania State Worry Questionnaire (PSWQ), the Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ), the Sentimentality Questionnaire (SQ), the UPPS-P Impulsive Behavior Scale (UPPS-P), and the Satisfaction with Life Scale (SWLS). An independent-samples t -test was conducted to compare scores between the groups. Firstly, the participants of two groups had no significant differences in hoarding symptom severity measured by SI-R, $t(92)=1.586$, *ns*. As

hypothesized, participants assigned to Type II group had significantly higher score than Type I participants on three constructs related to anxiety: anxiety sensitivity, $t(92)=3.678$, $p<.01$, worries, $t(92)=2.828$ $p<.01$, and sensitivity to punishment, $t(92)=3.895$, $p<.01$. On the other hand, There were significant differences between two groups in sentimentality, $t(92)=2.067$, $p<.05$ and satisfaction with life, $t(92)=2.340$, $p<.05$. For satisfaction with life, Type I group displayed higher score than Type II, the result was significant; $t(94)=1.724$, $p<.05$. There was no significant differences in impulsivity between two groups, $t(92)=1.026$, *ns*. Table 6 summarizes the descriptive data and *t*-test results from the analysis.

Table 6. *Summary of Mean (Standard Deviation) and t-test results of two groups*

	Type I (<i>n</i> =48)	Type II (<i>n</i> =44)	<i>t</i>
BAH Total	49.55 (13.66)	51.56 (12.01)	
BAH-AD	64.10 (15.74)	40.71 (16.81)	
BAH-FMD	51.76 (15.45)	65.51 (10.19)	
BAH-HA	21.46 (15.12)	35.32 (19.02)	
SI-R	26.92 (8.56)	29.59 (7.53)	1.586
ASI	13.08 (9.40)	20.77 (11.52)	3.678**
PSWQ	48.06 (12.83)	54.98 (10.36)	2.828**
SPQ	59.46 (9.83)	67.20 (9.19)	3.895**
UPPS-P	47.02 (6.28)	45.60 (6.93)	1.026
SQ	20.50 (2.59)	19.36 (2.68)	2.067*
SWLS	24.19 (4.47)	21.91 (4.87)	2.340*

Note. BAH= Beliefs About Hoarding Questionnaire, AD= Attachment Disturbance average, FMD= Fear of Material Deprivation average, HA= Harm Avoidance average, ASI= Anxiety Sensitivity Index-3, PSWQ= Pennsylvania State Worry Questionnaire, SPQ= Sensitivity to Punishment Questionnaire, UPPS-P= UPPS-P Impulsive Behavior Scale, SQ= Sentimentality Questionnaire, SWLS= Satisfaction with Life Scale

* $p<.05$, ** $p<.01$

Discussion

There were two main purposes in Study 1. The first objective of the study was translating Beliefs About Hoarding questionnaire, developed by Gordon, Salkovskis, and Oldfield (2013) into Korean and validating it. The construct validity was observed through factor analysis. The original questionnaire had three subscales: Attachment Disturbance, Harm Avoidance, and Fear of Material Deprivation. Through exploratory factor analysis, a three-factor model similar to the original study was observed. The three factors in the study retrieved their names from the original study.

The Korean BAH had moderate correlations with core symptoms of hoarding disorder, indicating its relevance to hoarding behaviors. Among three symptoms that SI-R measures, 'clutter' had shown the weakest correlation with the BAH. This finding could be attributed to participants' age, which was much younger than age where typical onset of severe hoarding symptoms are reported (APA, 2013). Among the core symptoms of hoarding, it takes relatively longer time to build a 'clutter' that may cause disturbances. The scale had an excellent internal consistency and its test-retest reliability conducted within four-week interval was good, indicating that the questionnaire is a reliable measure of assessing beliefs related to hoarding.

The second purpose of the study was to find differences in groups sorted by their beliefs related to hoarding. Group comparisons were performed to observe differences in relation to psychological constructs between groups scoring relatively higher on Attachment

Disturbance or the other two subscales. As hypothesized, Type II were more sensitive to punishment, had higher anxiety sensitivity, and higher level of worrying. It implies that their hoarding symptoms are connected to their anxiety.

On the other hand, the Type I group reported higher level of sentimentality, which implies that they put more emphasis on the past than the other group. It can be inferred from this finding, that their hoarding symptoms can be attributed to stronger attachment to the object and the memories of the past as well. Although the difference was significant, further exploration of the relationship between hoarders with attachment disturbance and sentimentality is needed in the future. The participants assigned to Type I group also reported that they are more satisfied with current life than the ones in Type II group, which implies that they are doing better in terms of psychological functioning.

One of the hypotheses was that participants assigned to Type I group will report higher levels of impulsivity, especially in sensation seeking and lack of premeditation. However, the results showed no significant difference in impulsivity between Type I group and Type II group. One possibility that may account for this result is that participants may have made mistakes while responding to UPPS-P impulsive behavior scale. Among the scales used in the present study, The UPPS-P was the only measure that uses reverse Likert scale, requiring participants to answer 1 for strongly agree and 4 for disagree while other scales had the opposite direction. This property of the scale might have resulted in relatively low internal consistency reported in the current study. It can be easily assumed that a mixed result could have been produced if a significant portion of the

participants had been mistaken. Some participants could have been fatigued due to the length of the whole questionnaire, which summed up to 200, and as UPPS-P was placed in the fourth quartile, there is a possibility that some participants could have missed the instruction and answered in the opposite way. As the results from this study does not support the hypothesis, the relationship between impulsivity and hoarding beliefs require further investigation. In order to prevent such possibilities in the future studies, it may be better to place UPPS-P in the initial stage of the questionnaire and remind the participants that Likert scale for this questionnaire is reversed. As another alternative, more intuitive scales such as BIS/BAS scale (Carver & White, 1994) can be used to assess levels of sensation seeking.

Study 2. Exploration of the emotional and cognitive differences between subclinical hoarding groups with different beliefs

In continuity to Study 1, Study 2 was designed to outline the differences in emotional experience and cognitive estimation related to objects between subclinical hoarders differing in hoarding beliefs. Participants who reported subclinical hoarding symptoms were assigned to two groups according to their more dominant hoarding belief types: Type I for those higher on Attachment Disturbance or Type II for those higher on Harm Avoidance and Fear of Material Deprivation. The two subclinical groups and a nonclinical control group were compared in means of ratings on affections and cognitions while reading short stories of acquiring and losing an object. There were two types of adjectives for acquisition situation: pleasantness (pleasant/strong) and relief, (relieved/peaceful) and two types for the loss situation: anxiety (anxious/fearful) and depression (sad/regrettable). Their cognitive forecasting related to the lost object was compared through asking how likely would an event would happen. Based on the proposed model, the followings are the hypotheses for Study 2:

- Hypothesis 1. Type II group will rate feelings related to anxiety (relieved/ peaceful, fearful/nervous) higher than Type I and control group will.
- Hypothesis 2. Type I group will rate positive emotions and feelings

related to depression (sad/regrettable) higher than Type II and control group will.

Hypothesis 3. Type II group will estimate higher possibility of needing the object in the future, and going through trouble for the absence of the object than Type I and control group will.

Method

Participants

A total of 61 college students participated in the study. 41 participants with subclinical hoarding symptoms were recruited through email based on the results of Study 1 and recruit postings on college online community. 20 Non-clinical controls were recruited through a research participation system managed by the Seoul National University Psychology department (R-Point system). Their participation was part of their psychology class requirements. Participants ranged in age from 18 to 30 years ($M=21.69$, $SD=2.55$).

Measures

Saving Inventory-Revised (SI-R). The scale is the same as in Study 1. For SI-R, a cutoff of 41 is used to discriminate between clinical and nonclinical hoarding (Frost, Steketee, & Tolin, 2012). The Korean version of the SI-R is an 18 item scale which has a score ranging from 18 to 72 (Hyeon, 2014) while the original SI-R is a 23-item questionnaire with the maximum score of 92. Considering the differences in total score and sample specificity of college students since severe hoarders are not likely to be found in 20s, the upper 25% (score 26 and higher) of the participants were judged as subclinical hoarder.

Beliefs about Hoarding Questionnaire (BAH). This is the Korean version of Beliefs about Hoarding Questionnaire which was validated

in Study 1. The subscale score of BAH is used to assign the participants to two groups. Type I group was composed of participants who scored relatively higher on Attachment Disturbance subscale while Type II group had relatively higher ratings on Fear of Material Deprivation and Harm Avoidance subscale.

Acquisition/Discarding Script. The script describes four paired imagery situations which are based on the study of clinical groups with significant hoarding symptoms. The first set is a situation in which the person finds a box full of old clothes and carries it home but disappears later. The second one is about picking up some old books, and then later inevitably discarding them with molds getting all over them. In the following pair of scripts, the person gets a free plastic fan, and loses it mindlessly. In the final set, the person picks up discarded glass bottle, but has to throw it away due to lack of space in the bag next day. There were several standards for creating the scripts. The object should be a common item and one that hoarders are likely to keep. It should also be low of monetary value, and has little functional utility. The situation in the script must not be peculiar, so that participants may easily imagine being in the situation. Also, situation of losing the object should not include theft or being forced by another person, since those situation are likely to cause anger to the reader.

Vivid Image Questionnaire. This is a one-item scale to assess how vividly a participant had imagined the situation after reading the scripts. The item is rated on a scale from 0 to 10, where 0 indicates 'I could not imagine it vividly at all,' and where 10 indicates 'I imagined it very vividly.' Cases where participant rated less than five in the scale were excluded from the analysis.

Multiple Affect Adjective Checklist (MAACL). This is the Korean version of Multiple Affect Adjective Checklist which is an adjective checklist for which respondents are asked to check all items that describe “How they feel at the moment” (Lee, 1980; Zuckerman & Lubin, 1965). In this study, adjectives for Positive Affect, Depression, and Anxiety are used and the items are adjusted into 10–point Likert scale ranging from 0 to 10, where 0 indicates ‘I do not feel it at all,’ and where 10 indicates ‘I feel it intensely.’ Eight words were used for each set, four positive affect for acquisition and four depression/anxiety for loss. Four positive words used after acquisition situation in this study were; pleasant and strong to measure neutral positive affect, then relieved and peaceful to measure the reduction of arousal after the gain. It was hypothesized that anxious/obsessive hoarders are likely to feel anxiety related to the object when making decision to keep the item, assuming the negative outcomes if one could not have the item. Acquiring the object would relieve their anxiety. The words used in discarding situations were fearful and nervous for anxiety condition, sad and regrettable representing depression. The internal consistency for the scale was excellent (Cronbach’s $\alpha = .95$).

Probabilistic Judgments Questionnaire. Lee (2003) used the Probability of Accidents Questionnaire to study the difference between the patients with persecutory delusion and depressed patients. In this study, two accidents related to objects were used in order to explore the differences in the cognitive estimation of Type 1 and Type 2 hoarders. Participants were instructed to estimate the probability of two events which were “I will need this object later,” and “I will face trouble for not having the object.”

Procedures

Upon arrival, the recruited participants first attended a briefing session for the experiment to learn about the aims of the study and receive the instructions for the study. They also filled out informed consent. Subsequently, participants were asked to read scripts related to acquiring and parting with an object and report their emotional experience regarding the event, the probabilistic judgment, and how vividly they imagined the situation. There were four sets of responses: each set started from reading a script on acquiring an object. After emotion evaluation regarding the acquisition, the participant read a sequel script where the object is gone, or inevitably thrown away. The participant would then be asked to check his or her feelings related to the loss, estimate the possibility of future events where the lost item might be needed, or participant would be in trouble caused by the absence of the item. Lastly, the participant evaluated how vivid his or her imagination was. The participants were instructed as following:

"From now on, you are going to read first-person narrated passages. I would like you to imagine, that you are the narrator. You may try to visualize the surroundings. Try to share narrator's experience. When you are done reading a passage, evaluate how you would feel, if you were in his or her perspective. The second passage resumes from where you left off. Again, imagine the situation and when the passage comes to the end, check how you would feel in his or her shoes. Then, estimate the probability, of how much these events are likely to occur in the future. Lastly, evaluate how vividly you could imagine being in the situation."

Results

Participants were assigned to three groups: Type I group ($n=20$; 9 Male, 11 Female), Type II group ($n=21$; 9 Male, 12 Female), and non-clinical controls ($n=20$; 9 Male, 11 Female). Individuals were judged as subclinical sample if they scored higher than 25 (25%ile) on SI-R. Participants who met the inclusion criteria for subclinical hoarding symptoms were divided into two groups (Type I with higher Attachment Disturbance subscale score and Type II with higher Fear of Material Deprivation and Harm Avoidance subscale score) based on their BAH subscale Z difference scores.

Table 7 summarizes descriptive statistics of hoarding symptoms and beliefs related to hoarding of three groups compared in the study. One-way analysis of variance revealed that participants assigned to subclinical groups reported hoarding symptoms significantly more than participants in control group; $F(2,58)=100.97$, $p<.01$. They also reported more intense beliefs regarding attachment

Table 7. *Summary of Mean (Standard Deviation) of age, hoarding severity and beliefs of three groups.*

	Type I ($n=20$)	Type II ($n=21$)	Control ($n=20$)
Age	22.00 (2.05)	22.95 (3.02)	20.05 (1.43)
SI-R	40.40 (9.29)	41.85 (9.61)	9.20 (4.89)
BAH-AD	62.43 (13.05)	52.44 (13.46)	41.00 (15.71)
BAH-FMD	45.13 (11.50)	58.44 (12.61)	33.68 (13.49)
BAH-HA	29.80 (13.28)	50.19 (15.73)	23.10 (15.22)

Note. SI-R= Saving Inventory-Revised, BAH= Beliefs About Hoarding Questionnaire, AD= Attachment Disturbance average, FMD= Fear of Material Deprivation average, HA= Harm Avoidance average

with objects than the ones in control group; $F(2,58)=10.268$, $p<.01$; and stronger extent of believing ideas related to saving items to avoid perceived harms; $F(2,58)=20.552$, $p<.01$.

To assess differences in emotional experiences, one-way analysis of variance was performed. Table 8 represents the differences in emotional ratings after reading the passage and mean cognitive estimation (%) regarding the possible need of the item in the future calculated by means across all four situations.

The difference between the subclinical groups and the control group was significant in all conditions. The subclinical groups reported more intense feelings of pleasantness; $F(2,58)=15.302$, $p<.01$, and felt more relieved upon acquisition of an item $F(2,58)=14.006$, $p<.01$. They also experienced stronger anxiety; $F(2,58)=13.994$, $p<.01$, and more depression $F(2,58)=17.806$, $p<.01$, at the loss of an item compared to the control group.

Table 8. *Summary of Mean (Standard Deviation) and F scores of three groups in emotional experience and cognitive forecasting.*

	Type I ($n=20$)	Type II ($n=21$)	Control ($n=20$)	F
Pleasant/Strong	5.57(1.46)	6.32(1.61)	3.66(1.66)	15.302**
Relieved/Peaceful	3.40(1.40)	4.88(1.86)	1.90(1.89)	14.006**
Fearful/Nervous	2.37(1.56)	3.84(1.62)	1.27(1.50)	13.994**
Sad/Regrettable	4.83(2.44)	5.97(1.46)	2.57(1.49)	17.806**
Estimation-Need	37.52(19.96)	46.92(23.15)	22.98(18.05)	7.041**
Estimation-Trouble	20.37(15.48)	25.54(18.80)	5.95(5.34)	9.984**

** $p<.01$

Also, the subclinical groups expected higher probability of being in need of the item; $F(2,58)=7.041$, $p<.01$, and going through trouble for not having the item, $F(2,58)=9.984$, $p<.01$, compared to the control group.

The differences in two subclinical groups were observed through independent sample t -tests. Among the comparison shown on Table 9, two significant differences were discovered. The participants assigned to Type II group reported more intense relief-related feelings upon acquisition than Type I group, $t(39)=-2.875$, $p<.01$. They also felt stronger anxiety-related feelings after discarding or losing an item than participants of Type I group, $t(39)=-2.964$, $p<.01$. Other contrasts were not significant.

Table 9. *Summary of Mean (Standard Deviation) and t-scores of two subclinical groups*

	Type I ($n=20$)	Type II ($n=21$)	t
Pleasant/Strong	5.57(1.46)	6.32(1.61)	1.555
Relieved/Peaceful	3.40(1.40)	4.88(1.86)	2.875**
Fearful/Nervous	2.37(1.56)	3.84(1.62)	2.964**
Sad/Regrettable	4.83(2.44)	5.97(1.46)	1.804
Estimation-Need	37.52(19.96)	46.92(23.15)	1.390
Estimation-Trouble	20.37(15.48)	25.54(18.80)	.959

** $p<.01$

Discussion

While Study 1 demonstrated differences in psychological constructs, emotional experiences and cognitive evaluation were compared in Study 2. Participants were given four sets of situations where they gain or lose an item, and rate how they would feel after the event. The cognitive evaluation was measured by comparing the estimated likelihood of negative events related to the item happening in the future.

The results indicated that both subclinical groups demonstrated more intense responses compared to the control group. From the differences found in the comparison, it can be inferred that they were well manipulated. Type II group reported more intense feelings related to anxiety upon the loss of item and relief of arousal at the acquisition of the item, as hypothesized. From the findings, it can be said that their hoarding behavior stem from their anxiety and anticipation of negative incomes.

It was hypothesized that participants of Type I group would report stronger positive emotion upon item acquisition and more intense feelings related to depression at the loss of the item than the Type II. However, the results did not support the hypothesis. On the contrary, the Type II group reported more intense emotions of pleasantness after the item gain and stronger grief/sadness upon discarding, although not significant. Furthermore, there was no specific question where Type I group had a significantly higher score than Type II group. These results seem as if Type II hoarders are emotionally affected from hoarding experiences to a greater extent

than Type I hoarders, even if the groups had no significant differences in hoarding symptoms severity.

There are possible explanations for the result. Firstly, the outcome may be attributed to the delivery of affective adjectives. The meanings of the words may not have been effectively delivered to the participants. Although the two pairs of words were selected to convey different nuances, participants could have missed the details. For example, some participants checked same ratings for all four words after a gain or a loss. For such a case, the participant may have missed the connotation each word implied due to insincerity or insensitivity, although there still is a possibility that he indeed felt those emotions at the same degree, simultaneously.

Second possible explanation regarding the words is that participants could have been affected by responses made beforehand, as the words were adjacently presented. To prevent this effect, the words could be presented separately with spaces in between them. An alternative way for measuring the emotional experience at the moment would be asking open-ended questions such as 'what is the emotion that is the closest to what you are feeling right now?' so that participants would not be affected by affective adjectives already shown beforehand.

Another possibility is that the scripts could not have successfully triggered emotional responses from the participants of Type I group. Participants had little actual time difference between reading acquisition script and loss script, although hours or days have passed in the script. The lack of temporal distance could have deprived participants of opportunities to form attachment to the item or to find meanings within the item. It could have resulted in

underrepresentation in depression-related words among Type I participants, since they felt little attachment to the item. To fend off such possibility, providing actual temporal distance may help exploring how a hoarder forms attachment to an object.

Furthermore, the result could have been caused by differences in familiarity to imagination. The Type II group reported slightly higher level of vividness in imagination, although not statistically significant. As participants from the Type I group had no interaction with the object, it would have caused in relative difficulties in imagining the situation. Type II hoarders, on the other hand, could have been more familiar to the experiment setting, since they could have been exposed to drawing imageries of threat and inclement situations, resulting in overstatement of emotional responses. Grisham and her colleagues (2009) conducted a study where participants chose a key-chain to keep and report the level of attachment immediately, and a week later. Such design may help to downsize the effects of confounding variables such as familiarity to imagination or its vividness.

The differences in cognitive evaluation upon loss was measured by having participants estimate negative events related to discarded item: needing it in the future, and being in trouble caused by the absence of the item. The evaluation differed between the subclinical group, with Type II group predicting the negative outcome more than the Type I group, but the difference was not significant. One of possibilities that caused this insignificance is that a large variance had been caused by open-ended question. Although participating individuals may have been biased in predicting probability of future events, there was no means to discount them.

The biases could be prevented by having other life events that could be used as index. Another possible suggestion for future study is to use scales with less choices, so that between-person variances can be minimized.

General Discussion

Over the past two decades, hoarding has gathered great interest among researchers. Along with the rapid increases in studies on hoarding came conflicting results that are difficult to explain. As it is widely agreed that hoarding is a heterogeneous syndrome, (Steketee & Frost, 2003) the extant subtype studies had not yet provided a persuasive explanation of the phenomenon. This study has set its aim onto finding a solution to the enigma by pointing out a possible classification of the heterogeneous hoarding behaviors and ones who hoard.

It was hypothesized that there would be two types of hoarding behaviors. To find the differences between them, the characteristics and experiences of hoarders differing in dominant hoarding behavior could be observed. To verify the model, an assessment tool was a prior requirement. For this objective, Belief About Hoarding Questionnaire (Gordon et al., 2013) was translated and validated into Korean in Study 1. The questionnaire was chosen because it assesses beliefs that are relevant to ideas that Type I and Type II hoarders may believe in. The scale had three-factor structure, each named Attachment Disturbance, Fear of Material Deprivation and Harm Avoidance. The scale had reliable internal consistency and acceptable test-retest reliability. The total scale and the subscales had significant correlation to hoarding symptoms, which imply that it is a measure that reliably assesses hoarding-related beliefs. The group comparison between Type I group and Type II group revealed differential correlations to psychological constructs. It

provided evidences that some hoarders are closely linked to anxiety-related factors, while sentimentality is an important factor in the other group.

A closer investigation was conducted in Study 2, limiting participants only to subclinical hoarders. Their emotional responses while reading scripts related to objects had been observed to outline differences between the groups assigned according to dominant belief type. The Type II hoarders felt more relief-related emotions upon item gain, as hypothesized. This finding is an empirical proof of the previous report that some hoarders acquire items to reduce negative emotions (Tolin, 2010). They also reported more anxiety when they were about to throw away items, implying that the ownership provides them sense of safety as the previous study (Hartl et al., 2005). However, unlike the hypothesis, Type I hoarders did not report more intense feelings of joy upon acquisition nor heavier feelings related to sorrow at the loss. Compared to repeatedly reported characteristics of Type II hoarders, the properties of Type I hoarders require further investigation in the future.

Combined together, from the results from Study 1 and Study 2, it can be concluded that there is a possibility that two distinct groups of people sharing common characteristics exist among the hoarders. Some of them may gather things to deal with negative emotions, while some others follow positive emotion and attachment. The results support the claims of the previous studies (Grisham et al., 2005; Hall et al., 2013; Steketee & Frost, 2003; Tolin et al., 2010), that there is a heterogeneity in hoarders.

Furthermore, this finding may provide plausible explanation to the mixed results related to anxiety-related constructs, such as harm

avoidance (Ecker & Gönner, 2008; Seaman et al., 2010) and anxiety sensitivity (Medley et al., 2013; Timpano et al., 2009). Drawing from the finding that there may be distinct groups of hoarders, it can be assumed that samples of heterogeneous participants could have produced the mixed results. The studies that used samples consisting a large portion of Type II hoarders could have produced results that harm avoidance or anxiety sensitivity plays an important role in hoarding, whereas studies with samples including smaller number of Type II hoarders would report results that downsize the importance of anxiety in hoarding behaviors.

The significances of this study are as follows. First, this study is meaningful because it provides the BAH, a measurement that reliably assesses beliefs related to hoarding in Korean. Even though hoarding is a subject that draws strong attention in the western countries, there are only a few studies conducted in Korea. Even though this study is not an epidemiological survey, it discovered that hoarding symptoms are prevalent among Korean college students as well, opening a possibility to conduct research with Korean samples in the future.

Secondly, it is the first study that suggested a classification model of hoarding behaviors based on beliefs. From the findings of the study, this model has several clinical implications. As it has been reported in the study, main emotion that trigger and perpetuate hoarding symptoms of Type II is anxiety. For a patient who mainly keeps things to avoid harmful future events, cognitive behavioral therapy focused on anxiety could be very effective. A group cognitive behavioral therapy program that deals mainly with anxiety related to objects could be designed targeting Type II hoarders. Such

development would help patients save time and cost of getting individually tailored cognitive behavioral therapy. For Type I hoarders, it was found from the satisfaction with life assessment that they have better psychological functioning than Type II. It indicates that their hoarding symptoms bother them less, meaning that they are more ego-syntonic. Despite the lack of findings from the current study that outline the specific properties of Type I hoarders, it is clear that a different treatment approach is required for a Type I hoarder.

Although the model is not yet fully tested, it would provide valuable information to nosological studies, where providing a novel criterion that helps to analyze a homogeneous group of patients can be very beneficial. In a study exploring correlates of hoarding behaviors, like aforementioned studies of anxiety-related constructs, a researcher could separate two subtypes and go through a different analysis, which would make explorations of the correlates much easier than it is now.

However, there are several limitations of this study. First of all, the participants were mostly limited to college students in their 20s, which is not the age where severe hoarding symptoms can be observed. In order to attain empirical foundation to generalize the findings from the study, the model should be tested with clinically significant hoarders.

Secondly, there were limitations in the assessment tool. Although BAH measures hoarding-related beliefs and some of them are related to the model, there are important aspects of the model that can hardly be captured by the questionnaire. For example, little is asked in BAH on experiences that entail acquiring an item. Some

questions regarding harm avoidance were so problematic that many nonclinical participants could not agree at all. As the BAH is not a scale exclusively created for the model presented in this study, there could have been errors in assignment stages. Furthermore, the measure is only limited to self-report method. A structured interview may be more accurate on deciding what type of hoarding behavior a participant often demonstrates. It would be easier to distinguish different types of hoarders in the future studies if a more sensitive means of assessment based the model is developed.

Another limitation of the study was weak findings related to Type I hoarders, the ones who hoard because of positive emotions, sentimentality and attachment. Although it was found that participants with higher score on Attachment Disturbance subscale report higher level of sentimentality and more satisfaction with life than participants, there was no significant differences in positive feelings related to acquisition or depression upon loss of item in Study 2 or impulsivity in Study 1. To reinforce the model, future studies focusing on exclusive characteristics of Type I hoarders are required.

Lastly, the sample size may not have been adequate for Study 2. In Study 1, there were enough participants so that only samples with Z score difference over 0.5 were used. On the other hand, it was harder to find a subclinical hoarder among college students with notable difference in beliefs related to hoarding. Researchers should consider the sample size while designing a study on hoarders since subclinical hoarders are not common in the college population.

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Appendix

- Appendix A. Summary of mean, standard deviation, skewness, and kurtosis of Beliefs About Hoarding Questionnaire–Korean Version
- Appendix B. Beliefs About Hoarding Questionnaire–Korean Version
- Appendix C. Beliefs About Hoarding Questionnaire–English Version
- Appendix D. Saving Inventory–Revised–Korean Version
- Appendix E. The Center for Epidemiological Studies Depression Scale –Korean Version
- Appendix F. Korean version of the State Trait Anxiety Inventory, Trait Version
- Appendix G. Anxiety Sensitivity Index–Korean Version
- Appendix H. Pennsylvania State Worry Questionnaire–Korean version
- Appendix I. Obsessive Beliefs Questionnaire–20–Korean Version
- Appendix J. Obsessive–Compulsive Inventory–Revised–Korean Version
- Appendix K. Sensitivity to Punishment and Sensitivity to Reward Questionnaire–Korean version
- Appendix L. Short UPPS–P Impulsive Behavior Scale–Korean Version
- Appendix M. Sentimentality Questionnaire
- Appendix N. Satisfaction with Life Scale–Korean Version
- Appendix O. Acquisition/Discarding Script
- Appendix P. Vivid image Questionnaire
- Appendix Q. Multiple Affect Adjective Checklist–Korean version
- Appendix R. Probabilistic Judgments Questionnaire

Appendix A. Summary of mean, standard deviation, skewness, and kurtosis of Beliefs About Hoarding Questionnaire-Korean Version

	<i>M</i>	<i>SD</i>	skewness	kurtosis
1. 필요할 것이라는 아주 작은 가능성이라도 있다면 이것을 갖고 있어야 한다.	64.97	23.10	-.68	-.43
2. 이 물건을 잘 보관하지 않는 것은 물건을 소홀하게 여기는 것이다	55.05	26.40	-.19	-1.10
3. 내 물건들 중 많은 것들이 내게 소중한 사람들과 연결되어 있기 때문에, 그것들을 잃는 것은 매우 고통스러운 일일 것이다.	56.38	26.48	-.22	-.93
4. 이걸 버리는 것은 내 일부를 버리는 것과 같다.	41.64	26.32	.23	-.85
5. 이것을 버리는 것은 내 삶을 바꿀 수도 있는 기회를 버리는 것이다.	29.26	23.24	.63	-.48
6. 나쁜 일이 일어나지 않게 하려면 이것을 가지고 있는 것이 중요하다.	32.67	25.93	.51	-.75
7. 공짜로 주어지는 물건을 갖지 않는 것은 매우 안타까운 일이다.	44.49	25.53	.04	-.81
8. 이 물건은 내가 아는 누군가를 떠올리게 하기 때문에, 물건이 손상되도록 놔둘 수 없다.	48.51	26.63	-.11	-.95
9. 새로운 물건을 얻어서 내 소유물에 편입시키는 것은 매우 신나고 흥분되는 일이다.	64.97	22.20	-.73	.48
10. 이 물건의 쓰임새를 찾는 것은 나의 책임이다.	54.97	24.12	-.37	-.51
11. 이걸 버리는 것은 이 물건에게 가혹한 일이다.	34.08	25.78	.46	-.69
12. 내가 이것을 보관하지 않으면, 이것은 누군가에게 해가 될 것이다.	20.00	20.04	1.10	.86
13. 이걸 버리면, 만약 필요한 상황이 왔을 때 매우 후회할 것이다	67.49	21.60	-.96	.98
14. 이 물건은 내 친구이기 때문에, 당연히 보관해야 한다.	29.28	25.34	.71	-.36
15. 과거에 이 물건을 가졌더라면 감사하게 여겼을 것이기 때문에, 나는 이걸 갖고 있어야 한다.	37.41	24.60	.17	-.88

		<i>M</i>	<i>SD</i>	skew ness	kurto sis
16.	나는 내 물건들에서 다른 사람들이 발견할 수 없는 가치를 발견한다.	43.59	24.92	-.01	-.85
17.	이 물건을 버린다면 그것은 내 과거의 기억을 버리는 것과 같기 때문에 기분이 나빠질 것이다.	50.18	27.44	-.17	-.93
18.	이걸 버리는 것은 낭비이기 때문에 나의 기분이 무척 나빠질 것이다.	38.23	24.75	.27	-.85
19.	이걸 버리는 것은 사랑하는 사람을 버리고 떠나는 것과 같다.	27.08	25.42	.88	-.04
20.	다른 사람들은 알 수 없더라도, 나는 내 물건들이 얼마나 가치 있는지 알 수 있다	49.18	25.40	-.16	-.77
21.	만약 이 물건에 안 좋은 일이 생긴다면, 그것은 물건과 연결된 누군가에게 위험이 닥칠 것이라는 뜻이다.	15.79	20.44	1.48	1.84
22.	이 물건을 제대로 관리하지 못하는 것은, 이것과 연결된 사람을 무시하는 것과 같다.	39.90	26.47	.11	-1.02
23.	만약 언젠가 유용하게 사용될 수 있는 물건을 버렸다면, 나는 기분이 매우 나빠질 것이다.	59.21	22.87	-.49	-.17
24.	나는 이 물건을 버리는 것이 완벽하게 옳다고 느껴질 때에만 버릴 것이다.	56.49	26.60	-.30	-.72
25.	중요한 물건을 버렸다고 비난 받을까 봐 걱정된다.	30.72	26.25	.53	-.74
26.	내가 이 물건을 잘 관리하지 않으면 손상될 것이다	48.03	23.95	-.23	-.67
27.	잘 활용될 것이라는 확신 없이 이 물건을 버린다면, 기분이 나빠질 것이다.	40.18	24.90	.12	-.87
28.	이 물건을 버리면, 내게 소중한 사람에게 해로운 일이 생길까 봐 버리지 못하겠다.	17.36	20.71	1.22	.73

13. 이걸 버리면, 만약 필요한 상황이 왔을 때 매우 후회할 것이다 0 10 20 30 40 50 60 70 80 90 100
14. 이 물건은 내 친구이기 때문에, 당연히 보관해야 한다. 0 10 20 30 40 50 60 70 80 90 100
15. 과거에 이 물건을 가졌더라면 감사하게 여겼을 것이기 때문에, 나는 이걸 갖고 있어야 한다. 0 10 20 30 40 50 60 70 80 90 100
16. 나는 내 물건들에서 다른 사람들이 발견할 수 없는 가치를 발견한다. 0 10 20 30 40 50 60 70 80 90 100
17. 이 물건을 버린다면 그것은 내 과거의 기억을 버리는 것과 같기 때문에 기분이 나빠질 것이다. 0 10 20 30 40 50 60 70 80 90 100
18. 이걸 버리는 것은 낭비이기 때문에 나의 기분이 무척 나빠질 것이다. 0 10 20 30 40 50 60 70 80 90 100
19. 이걸 버리는 것은 사랑하는 사람을 버리고 떠나는 것과 같다. 0 10 20 30 40 50 60 70 80 90 100
20. 다른 사람들은 알 수 없더라도, 나는 내 물건들이 얼마나 가치 있는지 알 수 있다 0 10 20 30 40 50 60 70 80 90 100
21. 만약 이 물건에 안 좋은 일이 생긴다면, 그것은 물건과 연결된 누군가에게 위험이 닥칠 것이라는 뜻이다. 0 10 20 30 40 50 60 70 80 90 100
22. 이 물건을 제대로 관리하지 못하는 것은, 이것과 연결된 사람을 무시하는 것과 같다. 0 10 20 30 40 50 60 70 80 90 100
23. 만약 언젠가 유용하게 사용될 수 있는 물건을 버렸다면, 나는 기분이 매우 나빠질 것이다. 0 10 20 30 40 50 60 70 80 90 100
24. 나는 이 물건을 버리는 것이 완벽하게 옳다고 느껴질 때에만 버릴 것이다. 0 10 20 30 40 50 60 70 80 90 100
25. 중요한 물건을 버렸다고 비난 받을까 봐 걱정된다. 0 10 20 30 40 50 60 70 80 90 100
26. 내가 이 물건을 잘 관리하지 않으면 손상될 것이다 0 10 20 30 40 50 60 70 80 90 100
27. 잘 활용될 것이라는 확신 없이 이 물건을 버린다면, 기분이 나빠질 것이다. 0 10 20 30 40 50 60 70 80 90 100
28. 이 물건을 버리면, 내게 소중한 사람에게 해로운 일이 생길까 봐 버리지 못하겠다. 0 10 20 30 40 50 60 70 80 90 100

Note. Item number 2, 5, 11, 14, 22 and 25 were excluded in the Korean Version

13. If I throw this out, I might be crippled by regret if I ever need it in the future. 0 10 20 30 40 50 60 70 80 90 100
14. This possession is my friend so I must keep it. 0 10 20 30 40 50 60 70 80 90 100
15. I have to have this item because I would have been grateful for it in the past. 0 10 20 30 40 50 60 70 80 90 100
16. I see an importance in my possessions that others can't see. 0 10 20 30 40 50 60 70 80 90 100
17. If I throw this possession away, it will be upsetting because it's like throwing away a memory of my past. 0 10 20 30 40 50 60 70 80 90 100
18. I would feel terrible if I got rid of this item because it would be wasteful to do so. 0 10 20 30 40 50 60 70 80 90 100
19. If I get rid of this item it is like abandoning someone I love. 0 10 20 30 40 50 60 70 80 90 100
20. I can see how valuable my possessions are although others can't. 0 10 20 30 40 50 60 70 80 90 100
21. If harm comes to this possession, that means that harm will come to the person connected to it. 0 10 20 30 40 50 60 70 80 90 100
22. I will be rejecting someone connected to this possession if I don't look after it properly. 0 10 20 30 40 50 60 70 80 90 100
23. I would be very upset if I didn't keep something which might come in handy someday. 0 10 20 30 40 50 60 70 80 90 100
24. I will throw this item out only when it feels completely right to throw it out. 0 10 20 30 40 50 60 70 80 90 100
25. I cannot stand the idea that I would be blamed for not having something important even if it seemed ordinary at the time I got rid of it. 0 10 20 30 40 50 60 70 80 90 100
26. This possession will be hurt if I don't take care of it. 0 10 20 30 40 50 60 70 80 90 100
27. It will be upsetting if I throw this item out without being sure it will be put to good use. 0 10 20 30 40 50 60 70 80 90 100
28. I can't throw things like this away because it might cause harm to come to someone I care for. 0 10 20 30 40 50 60 70 80 90 100
-

Appendix D. Saving Inventory-Revised - Korean Version

◆ 아래의 문항들을 주의 깊게 읽고 본인과 가장 알맞다고 느끼는 정도에 ✓ 체크하세요. 모든 문항에 하나도 빠짐없이 대답해 주시기 바랍니다.

	전혀 그렇 지 않다	약간 그렇 다	보통 이다	꽤 그런 편이 다	매우 그렇 다
1. 나는 물건을 버리는 게 힘들다.	1	2	3	4	5
2. 나는 물건을 버리는 게 고통스럽다.	1	2	3	4	5
3. 나는 가지고 있는 물건을 버리는 게 너무 괴롭거나 시간이 많이 걸려 물건을 버리는 걸 꺼린다.	1	2	3	4	5
4. 만일 내가 원했던 어떤 것을 습득하지 못하면 괴롭거나 기분이 좋지 않다.	1	2	3	4	5
5. 집안에 어지럽게 쌓여있는 물건들 때문에 사회적인, 직업적인 또는 일상적인 활동이 지장을 받는다.	1	2	3	4	5
6. 본 걸 습득해야 하는 충동을 자주 느낀다.(예를 들면, 쇼핑을 하거나 공짜 물건이 주어졌을 때)	1	2	3	4	5
7. 당장 사용하지 않는 물건을 사거나 공짜 물건을 습득하려는 충동이 강하다.	1	2	3	4	5
8. 물건을 습득하려는 충동을 자제할 수 없다.	1	2	3	4	5
9. 필요하지 않고 둘 공간이 없는 물건을 자주 보관하기로 결심한다.	1	2	3	4	5
10. 집에 물건이 어지럽게 쌓여있어 사람들이 자주 방문하지 못한다.	1	2	3	4	5
11. 즉시 사용하지 않거나 필요 없는 물건을 실제로 자주 산다.(또는 공짜 물건을 얻는다)	1	2	3	4	5
12. 절대로 사용하지 않을 걸 알면서도 무언가를 보관해 놓으려는 충동이 강하다.	1	2	3	4	5
13. 물건을 보관하려는 충동을 자제할 수 없다.	1	2	3	4	5
14. 집안에 물건이 어지럽게 쌓여 있어서 걸어 다니기 어렵다.	1	2	3	4	5
15. 집안에 어지럽게 쌓여 있는 물건들 때문에 집안 공간을 원래 용도대로 쓸 수 없다.(예를 들면, 요리하기, 가구 사용, 설거지, 청소하기 등)	1	2	3	4	5
16. 집안에 물건이 어지럽게 쌓여 가는 걸 통제 할 수 없을 것 같은 느낌이 든다.	1	2	3	4	5
17. 물건 보관이나 통제할 수 없는 구매로 인해 경제적 어려움을 겪는다.	1	2	3	4	5
18. 버리고 싶은 물건을 버리지 못한다.	1	2	3	4	5

Appendix E. The Center for Epidemiological Studies Depression Scale - Korean version

◆ 아래에 적혀 있는 문항을 잘 읽으신 후, 지난 1주 동안 당신이 느끼시고 행동하신 것을 가장 잘 나타낸다고 생각되는 숫자에 ○표 하시기 바랍니다.

나는 지난 1주 동안	극히 드물게 (1일 이하)	가끔 (1~2일)	자주 (3~4일)	거의 대부분 (5~7일)
1. 평소에는 아무렇지도 않던 일들이 귀찮게 느껴졌다	0	1	2	3
2. 가족이나 친구가 도와주더라도 울적한 기분을 떨쳐버릴 수 없었다.	0	1	2	3
3. 다른 사람만큼 능력이 있다고 느꼈다	0	1	2	3
4. 무슨 일을 하든 집중을 유지하기가 힘들었다	0	1	2	3
5. 하는 일마다 힘들게 느껴졌다.	0	1	2	3
6. 미래에 대하여 희망적으로 느꼈다	0	1	2	3
7. 내 인생은 실패작이라는 생각이 들었다	0	1	2	3
8. 두려움을 느꼈다	0	1	2	3
9. 세상에 홀로 있는 듯한 외로움을 느꼈다	0	1	2	3
10. 사람들이 나에게 차갑게 대하는 것 같았다	0	1	2	3

Appendix F. Korean version of the State Trait Anxiety Inventory, Trait Version

◆ 다음 문장들은 사람들이 자신을 표현하는데 사용되는 것들입니다. 각 문장을 잘 읽으시고 각 문장의 오른쪽에 있는 네 개의 항목 중에서 당신이 평소에 일반적으로 느끼는 바를 가장 잘 나타내주는 문항 하나에 동그라미(또는 V표)로 표시 하십시오.

	전혀 그렇지 않다	약간 그렇다	웬만큼 그렇다	상당히 그렇다
1. 나는 기분이 좋다	1	2	3	4
2. 나는 쉽게 피로해진다.	1	2	3	4
3. 나는 울고 싶은 심정이다	1	2	3	4
4. 나는 다른 사람들처럼 행복했으면 한다.	1	2	3	4
5. 나는 마음을 빨리 정하지 못해서 실패를 한다. .	1	2	3	4
6. 나는 마음이 놓인다	1	2	3	4
7. 나는 차분하고 침착하다.	1	2	3	4
8. 나는 너무 많은 여러 문제가 밀어닥쳐서 극복할 수 없을 것 같다.	1	2	3	4
9. 나는 하찮은 일에 너무 걱정을 한다	1	2	3	4
10. 나는 행복하다.	1	2	3	4
11. 나는 무슨 일이건 힘들게 생각한다.	1	2	3	4
12. 나는 자신감이 부족하다.	1	2	3	4
13. 나는 마음이 든든하다	1	2	3	4
14. 나는 위기나 어려움을 피하려고 애쓴다. .	1	2	3	4
15. 나는 울적하다.	1	2	3	4
16. 나는 만족스럽다.	1	2	3	4
17. 나는 사소한 생각이 나를 괴롭힌다. .	1	2	3	4
18. 나는 실망을 지나치게 예민하게 받아들이기 때문에 머릿속에서 지워버릴 수가 없다.	1	2	3	4
19. 나는 착실한 사람이다	1	2	3	4
20. 나는 요즈음의 걱정이나 관심거리를 생각하면 긴장되거나 어찌할 바를 모른다.	1	2	3	4

Appendix G. Anxiety Sensitivity Index - Korean version

◆ 아래의 문항들은 일반적으로 사람이 “불안을 느낄 때 드는 생각들”을 적은 것입니다. 자신이 불안을 느낄 때, 그와 같은 생각이 얼마나 드는 지를 “0(전혀 그렇지 않다)”에서 “4(매우 그렇다)”까지의 숫자에 ○표시를 해주세요.

	전혀	약간	어느 정도	많이	매우 많이
1. 남에게 불안하게 보이지 않아야 한다.	0	1	2	3	4
2. 일에 집중할 수 없어서 겁이 난다.	0	1	2	3	4
3. 심장이 빨리 뛰어서 겁이 난다.	0	1	2	3	4
4. 뱃속이 불편할 때, 심각한 병에 걸리지 않았나 걱정이 된다.	0	1	2	3	4
5. 일에 집중할 수 없게 되면, 미쳐버리지 않을까 걱정이 된다.	0	1	2	3	4
6. 사람들 앞에서 내가 떨고 있으면, 사람들이 나를 어떻게 생각할까 두렵다.	0	1	2	3	4
7. 가슴이 조여오면, 제대로 숨을 쉴 수 없을 것 같아 두려워진다.	0	1	2	3	4
8. 가슴에 통증이 느껴지면, 심장마비가 올까 봐 걱정이 된다.	0	1	2	3	4
9. 다른 사람들이 내가 불안하다는 것을 알아 차릴까봐 걱정된다.	0	1	2	3	4
10. 정신이 몽롱해지면, 정신병이 있을까봐 걱정이 된다.	0	1	2	3	4
11. 사람들 앞에서 얼굴이 붉어지면 두렵다.	0	1	2	3	4
12. 심장박동이 불규칙하다고 느껴지면, 나에게 뭔가 심각한 이상이 있을까 봐 걱정이 된다.	0	1	2	3	4
13. 사회적 상황에서 땀을 흘리면, 사람들이 나를 좋지 않게 생각할까 두렵다.	0	1	2	3	4
14. 여러 생각들이 물밀 듯 떠오르면, 혹시 내가 미쳐 가는 건 아닌지 걱정이 된다.	0	1	2	3	4
15. 목구멍이 조여오면, 질식사해서 죽을 것 같아 두렵다.	0	1	2	3	4
16. 명료하게 생각할 수 없을 때, 나에게 무슨 문제가 있을까 봐 걱정이 된다.	0	1	2	3	4
17. 공공장소에서 기절하는 것은 끔찍한 일이라고 생각한다.	0	1	2	3	4
18. 머리가 텅 빈 것 같을 때, 내가 뭔가 크게 잘못된 것은 아닌지 걱정이 된다.	0	1	2	3	4

Appendix H. Pennsylvania State Worry Questionnaire - Korean version

◆ 아래의 문항을 읽고 자신의 모습과 일치하는 정도를 찾아 하나의 해당번호 위에 ○표 해주시기 바랍니다.

	전혀 그렇지 않다	약간 그렇다	웬만큼 그렇다	상당히 그렇다	매우 그렇다
1. 나는 일을 다 끝낼 만큼 시간이 충분치 않아도 걱정하지 않는다.	1	2	3	4	5
2. 걱정이 나를 누른다.	1	2	3	4	5
3. 나는 그리 걱정하는 사람이 아니다.	1	2	3	4	5
4. 나는 여러 가지 일에 대해서 걱정한다	1	2	3	4	5
5. 나는 걱정하지 않아도 된다는 것을 알면서도 어쩔 수가 없다.	1	2	3	4	5
6. 뭔가에 압박을 받으면 상당히 걱정하게 된다.	1	2	3	4	5
7. 나는 늘 뭔가에 대해 걱정하고 있다.	1	2	3	4	5
8. 걱정스러운 생각을 떨쳐버리는 것이 어렵지 않다.	1	2	3	4	5
9. 무슨 일 하나를 끝내면 곧바로, 해야 할 다른 일에 대한 걱정이 시작된다	1	2	3	4	5
10. 나는 어떤 일에 대해서도 전혀 걱정하지 않는다.	1	2	3	4	5
11. 걱정거리에 대해 내가 할 수 있는 일이 없다면 더 이상 걱정하지 않는다.	1	2	3	4	5
12. 나는 지금까지 늘 걱정이 많은 사람이었다.	1	2	3	4	5
13. 얼마 전에도 어떤 것에 대해서 걱정하고 있었다.	1	2	3	4	5
14. 일단 걱정이 시작되면 멈출 수가 없다.	1	2	3	4	5
15. 나는 내내 걱정하고 지낸다.	1	2	3	4	5
16. 나는 어떤 일을 다 끝마칠 때까지는 그 일에 대해 계속 걱정한다.	1	2	3	4	5

Appendix I. Obsessive Beliefs Questionnaire-20

- Korean Version

◆ 아래의 문항들은 사람들이 일반적으로 가지는 여러 신념들에 관한 내용입니다. 문항들을 잘 읽고 귀하가 평소 생각한 바에 따라서 각 문항에 동의하는 정도에 O표 해 주십시오.

	전혀 동의 안함	동의 안함	별로 동의 안함	잘 모르 겠음	약간 동의 함	동의 함	매우 동의 함
1. 어떤 일을 완전히 확신하지 못하면, 실수를 하고 말 것이다. 가치 있는 사람이 되기 위해서는, 내가 하는 모든 일에	1	2	3	4	5	6	7
2. 서 완벽해야만 한다.	1	2	3	4	5	6	7
3. 해로운 일이 발생할 가능성이 매우 적어도, 어떠한 대가를 치르 고서라도 이를 막기 위해 노력해야 한다.	1	2	3	4	5	6	7
4. 나쁜 충동을 가지고 있는 것은 실제로 그것을 실행한 것만큼 나쁘다	1	2	3	4	5	6	7
5. 위험을 예견하고도 행동을 취하지 않는다면, 어떠한 결과에 대 해서도 내게 책임이 있다	1	2	3	4	5	6	7
6. 모든 일상적 상황에서, 해로운 일을 방지하지 못하는 것은 고의 로 해로운 일을 야기하는 것만큼이나 나쁘다.	1	2	3	4	5	6	7
7. 나에게, 해로운 일을 방지하지 않는 것은 해를 끼치는 것만큼 이나 나쁘다.	1	2	3	4	5	6	7
8. 실수를 저지른다면 당황할 수밖에 없다.	1	2	3	4	5	6	7
9. 내게는, 일이 완벽하지 않다면 바르지 못한 것이다.	1	2	3	4	5	6	7
10. 저질스런 생각을 하는 것은 내가 끔찍한 사람임을 뜻한다.	1	2	3	4	5	6	7
11. 특별한 주의를 기울이지 않으면, 나는 남들에 비해 더 심각한 재난을 맞거나 일으킬 것 같다.	1	2	3	4	5	6	7
12. 나는 남들보다 우연하게 나 자신이나 남에게 해를 더 끼칠 것 같다.	1	2	3	4	5	6	7
13. 나쁜 생각을 한다는 것은 내가 이상하거나 비정상적이라는 것 을 의미한다.	1	2	3	4	5	6	7
14. 내가 신중할 때조차도, 종종 나쁜 일이 일어날 것이라고 생각한 다.	1	2	3	4	5	6	7
15. 침투적인 생각이 떠오른다는 것은 내가 통제력이 없음을 의미 하는 것이다.	1	2	3	4	5	6	7
16. 매우 신중하지 않으면, 해로운 사건이 발생할 것이다.	1	2	3	4	5	6	7
17. 어떤 일이 정확히 옳게 마무리 될 때까지는 계속 매달려야 한 다.	1	2	3	4	5	6	7
18. 내게는 재난을 예방하지 못한 것이 그것을 야기한 것만큼 나쁜 일이다.	1	2	3	4	5	6	7
19. 나쁜 생각을 하는 것은 실제로 나쁜 것을 하는 것과 도덕적으 로 다를 바 없다.	1	2	3	4	5	6	7
20. 내가 무엇을 해도 충분히 잘하지 못할 것이다.	1	2	3	4	5	6	7

Appendix J. Obsessive-Compulsive Inventory-Revised - Korean Version

◆ 이 질문지는 많은 사람들이 일상생활에서 경험할 수 있는 내용들로 구성되어 있습니다. 각 문장을 읽고, 지난 1달 동안 다음의 경험들로 인해 당신이 얼마나 스트레스를 받았거나 힘들었는지, 그에 해당하는 숫자에 √표시를 하시기 바랍니다. 모든 문항에 하나도 빠짐없이 대답해 주시기 바랍니다.

	전혀 그렇지 않다	약간 그렇다	보통 이다	꽤 그런 편이다	매우 그렇다
1. 그동안 모은 너무 많은 물건들이 오히려 방해가 될 정도이다.	0	1	2	3	4
2. 나는 필요 이상으로 자주 확인을 하는 편이다.	0	1	2	3	4
3. 나는 물건들이 제대로 정돈되어 있지 않으면 화가 난다.	0	1	2	3	4
4. 나는 어떤 일을 할 때 숫자를 세야 할 것만 같은 느낌이 든다.	0	1	2	3	4
5. 나는 어떤 물건을 낫선 사람들이나 특정 사람들이 만졌다는 사실을 알게 되면 그 물건을 만지기 어렵다.	0	1	2	3	4
6. 나는 내 생각을 내 마음대로 조절하기가 어렵다.	0	1	2	3	4
7. 나는 내가 필요하지 않은 것들을 모으는 습관이 있다.	0	1	2	3	4
8. 나는 습관적으로 문, 창문, 서랍 등을 확인한다.	0	1	2	3	4
9. 나는 내 방식대로 정리한 것들을 다른 사람들이 바꾸어 놓으면 화가 난다.	0	1	2	3	4
10. 나는 어떤 일을 특정 횟수만큼 반복해야만 할 것 같은 느낌이 든다.	0	1	2	3	4
11. 나는 단지 내가 더러워졌다는 생각 때문에 몸을 씻어야 할 때가 있다.	0	1	2	3	4
12. 나는 나의 의지에 반하여 마음속에 떠오르는 생각들 때문에 기분이 나쁘다.	0	1	2	3	4
13. 나는 나중에 필요할지도 모른다는 두려움 때문에 물건을 잘 버리지 못한다.	0	1	2	3	4
14. 나는 가스밸브, 수도꼭지, 전등 스위치를 끄고 나서도 반복적으로 확인하는 습관이 있다.	0	1	2	3	4
15. 나는 물건들이 특정 순서로 정돈되어 있길 원한다.	0	1	2	3	4
16. 나는 좋은 숫자와 나쁜 숫자가 있다고 생각한다.	0	1	2	3	4
17. 나는 필요 이상으로 자주, 오래 손을 씻는 편이다.	0	1	2	3	4
18. 나는 자주 음란한 생각을 하고, 그 생각을 떨쳐버리기가 힘들다	0	1	2	3	4

Appendix K. Sensitivity to Punishment and Sensitivity to Reward Questionnaire - Korean version

◆ 아래의 질문들을 읽고 자신의 생각과 전혀 다르다면 ‘① 전혀 아니다’에, 자신의 생각과 어느 정도 다르다면 ‘② 아니다’에, 자신의 생각과 어느 정도 같다면 ‘③ 그렇다’에, 자신의 생각과 매우 같다면 ‘④ 매우 그렇다’에 O표를 해주십시오.

	전혀 아니다	아니다	그렇다	매우 그렇다
1. 불법일까 두려워 뭔가 하는 것을 억제한 적이 종종 있습니까?	1	2	3	4
2. 무엇인가 구해보았자 얻어질지 확실하지 않으면 차라리 아예 그것을 구하려고도 하지 않는 편입니까?	1	2	3	4
3. 새롭거나 예상치 못한 상황을 두려워하는 편입니까?	1	2	3	4
4. 모르는 사람에게 전화 거는 일이 당신에게는 어려운 일입니까?	1	2	3	4
5. 당신은 어떤 사람 또는 조직과의 싸움을 피하려고 당신의 권리를 포기할 때가 종종 있습니까?	1	2	3	4
6. 당신은 어릴 때 학교나 집에서 받은 벌 때문에 마음이 힘들곤 했습니까?	1	2	3	4
7. 어떤 과제를 제대로 준비하지 못하면, 그 과제에서 실패할 가능성을 대단히 중요하게 여기게 됩니까?	1	2	3	4
8. 어려운 상황에서 당신은 쉽게 낙담하는 편입니까?	1	2	3	4
9. 당신은 수줍음을 타는 편입니까?	1	2	3	4
10. 창피 당할까 봐 두려워 가능한 한 당신의 능력을 보이기를 피하는 편입니까?	1	2	3	4
11. 사람들 속에 있을 때 당신은 좋은 이야기 거리를 고르는 게 어렵습니까?	1	2	3	4
12. 당신은 당신이 했던 일이나 해야 할 일에 대해 생각하느라 종종 잠들기가 어렵습니까?	1	2	3	4
13. 당신은 식당에서 음식이 제대로 나오지 않는다면 불평하기에 앞서 생각을 많이 하는 편입니까?	1	2	3	4
14. 상점에서 거스름돈을 잘못 준 것을 알아차렸을 때, 굳이 그 상점에 다시 돌려주러 가겠습니까?	1	2	3	4
15. 당신은 잘 모르는 곳에 가는 것을 할 수만 있다면 피하는 편입니까?	1	2	3	4

- | | | | | |
|--|---|---|---|---|
| 16. 당신은 종종 당신이 했던 말 또는 행동 때문에 걱정하는 편입니까? | 1 | 2 | 3 | 4 |
| 17. 상사에게 월급을 올려달라고 요구하는 것이 당신에게는 어려운 일입니까? | 1 | 2 | 3 | 4 |
| 18. 보통 당신은 많은 사람들 앞에서 연설하기를 피하려고 노력하는 편입니까? | 1 | 2 | 3 | 4 |
| 19. 당신은 당신의 불안정감이나 두려움만 없다면 더 많은 일을 할 수 있을 거라고 생각하곤 합니까? | 1 | 2 | 3 | 4 |
| 20. 당신 자신을 당신이 아는 다른 사람들과 비교해 볼 때, 두려워하는 게 많은 편입니까? | 1 | 2 | 3 | 4 |
| 21. 당신은 어떤 일을 너무 걱정해서 머리 쓰는 일을 잘 못하게 될 정도가 될 때가 종종 있습니까? | 1 | 2 | 3 | 4 |
| 22. 당신은 남들로부터 외면당하거나 비난 받을까 두려워 당신이 좋아하는 것을 하고 싶어도 하지 못할 때가 자주 있습니까? | 1 | 2 | 3 | 4 |
| 23. 일반적으로 당신은 유쾌한 일들보다는 위협이 되는 것들에 더 신경을 쓰는 편입니까? | 1 | 2 | 3 | 4 |
| 24. 창피 당하게 될까 봐 무서워 뭘 못하는 때가 자주 있습니까? | 1 | 2 | 3 | 4 |
-

Appendix L. Short UPPS-P Impulsive Behavior Scale - Korean version

◆ 아래 문항들은 사람들이 행동하고 생각하는 방식을 기술한 것입니다. 각각의 문항에 대하여 귀하가 얼마나 동의/반대하시는지를 표시해 주십시오. 매우 동의한다면 1, 약간 동의한다면 2, 약간 반대한다면 3, 매우 반대한다면 4에 ○표해 주십시오. 모든 문항에 빠짐없이 답변해주시기 바랍니다.

	매우 동의함	약간 동의함	약간 반대함	매우 반대함
1. 대체로 나는 어떤 일을 끝까지 해내려고 한다.	1	2	3	4
2. 나의 사고방식은 보통 신중하고 목적 지향적이다.	1	2	3	4
3. 매우 행복하다고 느낄 때는 나쁜 결과를 초래할 수도 있는 행동을 멈출 수가 없을 것 같다.	1	2	3	4
4. 끝내지 못한 과제는 나를 정말 신경 쓰이게 만든다.	1	2	3	4
5. 나는 어떤 일을 하기 전에 멈춰서 숙고하기를 좋아한다.	1	2	3	4
6. 기분이 나쁠 때면 당장 기분을 좋아지게 하기 위해서 나중에 후회할 일을 종종 하게 된다.	1	2	3	4
7. 일단 어떤 일을 진행하기 시작하면 도중에 중단하는 것이 싫다.	1	2	3	4
8. 기분이 나쁠 때면 가끔씩, 내가 하고 있는 일이 내 기분을 더 나쁘게 하더라도 그 일을 멈추기가 어렵다.	1	2	3	4
9. 나는 모험하는 것을 상당히 즐긴다.	1	2	3	4
10. 강렬한 환희를 느낄 때, 나는 통제력을 상실하는 경향이 있다.	1	2	3	4
11. 나는 시작한 일은 완수한다.	1	2	3	4
12. 나는 어떤 일을 할 때 합리적이고 이성적인 접근을 중시하며 그렇게 하는 편이다.	1	2	3	4
13. 속이 상할 때, 나는 종종 생각 없이 행동하곤 한다.	1	2	3	4
14. 나는 다소 두렵고 이색적인 것일지라도 새롭고 자극적인 경험과 감각을 좋아한다.	1	2	3	4
15. 거부당했다고 느끼게 되면, 나는 종종 나중에 후회할 말을 하게 된다.	1	2	3	4
16. 나는 비행기 조종법을 배우고 싶다.	1	2	3	4
17. 다른 사람들은 내가 매우 기분이 좋아 흥분했을 때 하는 행동에 대해서 충격을 받거나 우려한다.	1	2	3	4
18. 나는 높은 산비탈에서 빠르게 내려오는 스키의 감각을 즐길 것 같다.	1	2	3	4
19. 대체로 나는 어떤 일을 하기 전에 신중하게 생각한다.	1	2	3	4
20. 정말 기분이 좋아 흥분할 때는 내 행동의 결과를 생각하지 않는 경향이 있다.	1	2	3	4

Appendix M. Sentimentality Questionnaire

◆ 아래의 문장들은 과거에 대한 태도와 관련된 것들입니다. 각각의 문장에 대해 동의 혹은 반대하는 정도를 ○표시해주세요. 자유롭게 솔직하게 응답해 주시기 바랍니다.

	동의 안함	잘 모르 겠음	동의함	매우 동의함
1. 과거는 내게 매우 중요하다.	1	2	3	4
2. 과거가 내 현재와 미래에 큰 영향을 미친다.	1	2	3	4
3. 나는 과거에 대해 자주 생각한다.	1	2	3	4
4. 과거와 관련된 감정들은 지금의 감정의 큰 부분을 차지한다.	1	2	3	4
5. 나는 내 삶의 가장 중요한 일들이 과거에 일어났다고 생각한다.	1	2	3	4
6. 내 과거는 미래에 대한 영감을 준다.	1	2	3	4
7. 나는 대부분의 사람들보다 감상적이다.	1	2	3	4

Appendix N. Satisfaction with Life Scale - Korean Version

◆아래에는 당신이 동의할 수도 있고 그렇지 않을 수도 있는 다섯 문항이 제시되어 있습니다. 각 문항에 동의 또는 반대하는 정도에 따라서 1-7 사이의 숫자에 ○표 해주시기 바랍니다. 자유롭게 솔직하게 응답해 주시기 바랍니다.

	전혀 아니다	아니다	약간 아니다	중간 이다	약간 그렇다	그렇다	매우 그렇다
1. 전반적으로 나의 인생은 내가 이상적으로 여기는 모습에 가깝다	1	2	3	4	5	6	7
2. 내 인생의 여건은 아주 좋은 편이다	1	2	3	4	5	6	7
3. 나는 나의 삶에 만족한다.	1	2	3	4	5	6	7
4. 지금까지 나는 내 인생에서 원하는 중요한 것들을 이루어냈다	1	2	3	4	5	6	7
5. 다시 태어난다 해도, 나는 지금처럼 살아갈 것이다	1	2	3	4	5	6	7

Appendix O. Acquisition/Discarding Script

1-1. 나는 산책을 하러 나왔습니다. 동네를 천천히 둘러보면서 걷고 있는데 길에서 '필요하신 분은 가져가세요' 라고 적혀있는 사과박스를 발견했습니다. 박스 안에는 여러 가지 옷가지들이 차곡차곡 쌓여있습니다. 누군가 자신이 입던 옷을 내놓은 것 같습니다. 몇 벌을 꺼내보니 조금은 낡아 보이고 내가 가지고 있던 옷들과 스타일도 비슷해 보입니다. 하지만 사이즈는 적당히 맞는 것 같아 잠시 망설입니다. 그러다가 일단은 상자를 들어 집으로 가지고 왔습니다.

1-2. 나는 박스를 들고 집으로 돌아왔습니다. 현관문을 열려고 일단 박스를 내려놓았는데 내 방안에 있던 휴대폰이 울리는 소리가 들립니다. 일단은 전화부터 받기 위해 빨리 신발을 벗고 안으로 들어갑니다. 오랜만에 연락된 친구여서 이야기를 하다 보니 통화가 꽤 길어졌습니다. 통화를 마치고 나니 박스가 생각납니다. 그런데 현관문을 열어보니 박스가 어디로 갔는지 보이질 않습니다. 누군가가 가져간 것 같습니다.

2-1. 나는 수업을 마치고 학교의 복도를 걷고 있습니다. 그러던 중 어떤 교수님의 연구실 앞에서 밖에 쌓아둔 책 더미를 발견했습니다. 교수님이 책장을 정리하다가 버리려고 둔 것 같습니다. 이 전공에 대해서는 평소에 별로 관심이 없었고 지금 하는 공부와도 그다지 관련은 없어 현재로서는 내게 도움 될 것 같아 보이지 않습니다. 하지만 웬지 가지고 있는 게 나올 것 같은 마음이 들어 망설입니다. 그러다가 그 중 몇 권을 집으로 들고 왔습니다.

2-2. 집으로 돌아온 나는 책들을 둘 자리를 찾아봅니다. 마침 방안 한구석이 비어 있어서 그곳에 두었습니다. 그리고는 몇 주가 지났습니다. 길으로는 보이지 않았는데 책을 들추어 내니 책과 맞닿았던 부분의 벽에 곰팡이가 많이 생겼습니다. 더불어 곰팡이가 책으로까지 옮겨가서 글자를 읽기가 힘들 정도입니다. 결국 책들을 집 앞의 분리 수거함에 버렸습니다.

3-1. 나는 친구를 만나서 학생회관에서 점심을 먹으며 만족스러운 대화를 나누었습니다. 학생회관 건물 앞에서는 어떤 사람이 광고가 찍혀 있는 둥그란 플라스틱 부채를 나눠주고 있습니다. 지금은 별로 덥지 않고 집에 비슷한 모양의 부채가 있었지만, 웬지 가지고 싶은 마음이 들어 그 사람에게 다가가 부채를 받았습니다.

3-2. 나는 아르바이트를 마치고 집으로 돌아가는 길입니다. 집에 거의 다 온 상태에서 아까 낮에 받은 부채가 문득 떠올랐습니다. 가방을 열어 어디에 있는지 찾아 봤는데 어디에도 보이지 않습니다. 아까 지하철을 탔을 때 가방 속의 다른 물건을 찾느라 부채를 잠시 꺼내 봤었는데, 그곳에 그대로 두고 온 것 같습니다.

4-1. 나는 방학을 맞이하여 혼자 지방으로 여행을 왔습니다. 숙소를 일찍 잡게 되어서 근처를 천천히 둘러보면서 걷고 있는데, 어느 집 앞에서 버려둔 유리병을 발견했습니다. 흔히 볼 수 있는 일상적인 모양의 유리병입니다. 그냥 지나가려다가 웬지 가져가고 싶다는 느낌이 들어서 멈춰 섰습니다. 일단 유리병을 들어서 숙소로 가지고 왔습니다.

4-2. 다음 날, 나는 다음 행선지로 이동하기 위해 짐을 챙깁니다. 다른 것들을 다 챙기고 나니, 마지막으로 유리병이 남았습니다. 그런데 어떻게 해도 병을 넣을 공간이 나지 않는다는 것을 깨닫게 됩니다. 이미 양손에 짐이 가득하기 때문에 더 들기도 힘듭니다. 어쩔 수 없이 유리병을 쓰레기통에 버리고 숙소를 나옵니다.

Appendix P. Vivid Image Questionnaire

◆ 위 상황을 얼마나 생생하게 상상하셨습니까?

전혀 생생하게
상상하지 못했다(0)
매우 생생하게
상상했다(10)

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

Appendix Q. Multiple Affect Adjective Checklist

- Korean version

◆ 아래의 단어들을 읽어보고, 지금 느껴지는 정서 상태를 표시하여 주시기 바랍니다.

	정서	거의 느끼지 않았다 (0)		-----								아주 심하게 느꼈다. (10)	
		0	1	2	3	4	5	6	7	8	9	10	
1	기운이 나는	0	1	2	3	4	5	6	7	8	9	10	
2	기분 좋은	0	1	2	3	4	5	6	7	8	9	10	
3	안심하는	0	1	2	3	4	5	6	7	8	9	10	
4	차분해지는	0	1	2	3	4	5	6	7	8	9	10	

	정서	거의 느끼지 않았다 (0)		-----								아주 심하게 느꼈다. (10)	
		0	1	2	3	4	5	6	7	8	9	10	
1	두려운	0	1	2	3	4	5	6	7	8	9	10	
2	불안한	0	1	2	3	4	5	6	7	8	9	10	
3	슬픈	0	1	2	3	4	5	6	7	8	9	10	
4	안타까운	0	1	2	3	4	5	6	7	8	9	10	

Appendix R. Probabilistic Judgments Questionnaire

◆ 아래에 제시된 각각의 상황이 당신에게 일어날 확률을 추정하여 0%에서 100% 사이로 평정해 주시기 바랍니다.

이 물건이 필요한 상황이 올 것이다.	_____%
이 물건이 없어서 곤란한 일을 겪을 것이다.	_____%

국 문 초 록

최근에 저장행동의 현상 및 그와 관련된 변인들에 대한 연구들이 활발히 이루어졌다. 그러나 이 과정에서 대립되는 연구 결과가 다수 도출되었으며, 심한 저장행동을 보이는 집단, 즉 저장 장애 환자집단이 하나의 동질적인 집단이 아니라는 합의가 점차 이루어지고 있다. 저장 장애 환자들을 분류하려는 시도들도 있었으나 단순히 공병 장애나 유발 시점과 관련되어 있어 충분한 정보를 제공하지 못하고 있다. 본 연구의 목적은 저장 행동을 두 가지 유형으로 구분하는 모형을 제안하고, 각 유형의 저장행동을 주로 하는 사람들의 정서적, 인지적 특성을 밝히고자 하는 것이다. 제 1유형은 물건을 얻고 간직하는 과정에서 긍정 정서와 애착을 느끼는 저장행동이며, 제 2유형은 물건을 보관함으로써 부정 정서를 감소시키고, 안정감을 얻기 위한 저장행동이다.

연구 1에서는 저장 신념 질문지 (Beliefs About Hoarding Questionnaire)를 한국어로 번안하고, 신뢰도 및 타당도를 확인하였다. 이를 위해 390명의 대학생으로부터 얻은 자료를 바탕으로 요인분석 및 신뢰도분석을 시행하였으며, 관련 척도들과의 상관분석을 실시하였다. 분석에 따르면 저장 신념 질문지는 3요인 구조로 구성되어 있으며, 적절한 신뢰도를 가진 것으로 확인되었다. 하위 요인인 애착장애는 1유형과, 물질적 결핍에 대한 두려움과 위협회피는 2유형의 저장행동에 해당하는 것으로 판단되었다. 저장 신념 질문지의 하위척도간 Z점수 차를 바탕으로 1유형과 2유형의 집단을 나누어, 각 유형과 관련 있을 것이라 예상된 여섯 가지 요인들: 처벌민감성, 불안민감성, 걱정, 충동성, 감상성, 그리고 삶의 만족도를 비교하였다. 그 결과, 2유형 집단은 처벌민감성, 불안민감성, 걱정수준이 1유형 집단에 비해 유의미하게 높았다. 반면 1유형 집단은 2유형보다 유의미하게 높은 수준의 감상성과 삶의 만족도를 보고하였다.

연구 2에서는 준임상군 수준의 저장행동을 보이는 41명의 참가자들을 저장관련 믿음에 따라 총 두 집단으로 나누었으며, 20명의 통제 집단과 함께 물건의 습득 및 폐기와 관련된 정서적, 인지적 측면에서의 차이를 탐색하였다. 참가자들은 물건을 얻거나 잃게 되는 상황을 읽고 느껴지는 정서와 앞으로 생길 수 있는 일에 대해 평가하였다. 그 결과, 2 유형에 속한 참가자들은 1유형 집단에 비해 물건 습득상황에서 부정적 각성의 감소, 안심과 관련된 감정들을 더 강하게 느끼며, 폐기상황에서는 불안과 관련된 감정들을 더 강하게 느끼는 것으로 보고하였다.

본 연구 결과는, 더 우세한 저장행동 유형에 따라 불안관련 변인들, 감상성, 삶의 만족도에서 차이가 발견되며, 물건을 얻고 버리게 되는 상황에서의 감정경험에서 차이를 보인다는 것을 나타내었다. 이런 결과는 저장장애 환자들 사이에서의 이질성을 지지하며, 더불어 각기 다른 특성을 가진 집단이 공존함을 시사한다. 마지막으로 본 연구의 시사점과 제한점, 그리고 후속 연구를 위한 제안점을 제시하였다.

주요어: 저장장애; 저장신념 질문지; 저장행동의 하위유형

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