How do you restrain yourself from avoidance when distressed? Distress tolerance and affective associations of avoidance/withstanding behaviors in college-aged heavy drinkers

Jang-Won Seo *

Department of Psychology, Chonbuk National University, Jeonju, Republic of Korea

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**A B S T R A C T**

Distress tolerance (DT) has been considered an important contributor to manifestation, maintenance, and relapse of alcohol use problems. However, factors that could influence DT among heavy drinkers are unclear. The current study examined the role of affects linked to avoidance/withstanding behavioral options in deciding whether to withstand distressful experiences with a sample of heavy drinkers. To this end, the author administered a well-validated instrument to assess implicit affective associations of avoidance/withstanding options to 36 heavy drinkers and conducted ecological momentary assessment to measure DT of the participants for one week. Multilevel model analyses revealed that affects linked to avoidance/withstanding options were closely related to DT. Affects linked to avoidance/withstanding options could influence DT in heavy drinkers and warrant further exploration.

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**1. Introduction**

Many people drink alcohol to reduce feelings of distress (Carpenter & Hasin, 1999; Stockwell, Hodgson, & Rankin, 1982). The amount and frequency of drinking can vary depending on a person’s ability to withstand distress. Distress tolerance (DT), the capacity to withstand aversive experiential states, has been considered an important contributor to the manifestation, maintenance, and relapse of alcohol use problems (Gorka, Ali, & Daughters, 2012). However, there are only few theoretical/empirical studies investigating factors that could influence DT in those with alcohol problems.

A promising theoretical model of DT that describes hypothetical mechanisms underlying the process of withstanding distress was proposed by Trafton and Gifford (2011). According to them, DT can be defined as the ability to inhibit responding to a behavioral option that could reduce distress immediately (i.e., an immediate negative reinforcement (NR) opportunity) during distressful states. While experiencing distress, people estimate the expected punishments (EP) of responding to an NR opportunity and the expected rewards (ER) of not responding. The results of these estimations could influence the decision of whether to withstand the distress or not. If someone estimates the EP of responding to an NR opportunity and the ER of not responding to the opportunity highly, then she/he would decide to withstand distress.

One way to assess the ER/EP of an option is to measure the affect linked to that option. According to the literature on the “affect heuristic”, the affective associations of certain options could be used as a heuristic when people estimate ER/EP (Slovic, Finucane, Peters, & MacGregor, 2007). Damasio (1994) also suggested that learning causes certain options to become marked by positive or negative affects and that these affects could be used to predict future outcomes of the options. Similarly, Mowrer (1960) argued that conditioned emotional responses to certain images reflect prospective gains and losses. Thus, the EP of taking an avoidance option (AO; responding to an NR opportunity) and the ER of taking a withstanding option (WO; not responding to an NR opportunity) could be assessed by the positive/negative affects linked to AO and WO (Seo & Kwon, 2016). People could then use these affects to decide whether to withstand distress.

A recent study examined the relations between DT and the affects linked to AO/WO in college heavy drinkers (Seo & Kwon, 2016). In this study, the authors differentiated types of AO/WO and DT to examine the relations between DT and the affects linked to AO/WO in a more detailed manner. According to the researchers, there are two types of distressful situations. The first type is when a person performs a distressful task. In this case, the AO would be to stop performing the task (AO-Quitting), the WO would be to continue performing the task (WO-Persevering), and the relevant DT would be the capacity to persevere with the task (DT-Persevering Capacity). The second type is when a person is distressed by negative events but is not performing any...
specific tasks. In this situation, a person would relieve distress by performing specific activities (AO-Relieving), and for heavy drinkers, one of the most salient relieving behaviors would be to drink alcohol (Carpenter & Hasin, 1999; Stockwell et al., 1982). Here, the WO would be to endure without relieving distress (WO-Enduring), and the relevant DT would be the capacity to endure ongoing distress (DT-Enduring Capacity). Hierarchical regression analyses showed that the affects linked to AO-Quitting and WO-Persevering are closely related to DT-Persevering Capacity, whereas the affects linked to AO-Relieving and WO-Enduring are associated with DT-Enduring Capacity even after controlling for depression, anxiety, and alcohol use problems of the participants (Seo & Kwon, 2016).

The study conducted by Seo and Kwon (2016) is valuable because it was the first trial to examine the relationships between DT and the affects linked to AO/WO. However, there are several concerns that need to be addressed. First, the study relied on participants’ self-reports to measure the affects linked to AO/WO. The self-report technique is a common means to assess affective associations of certain concepts or images (Slovic et al., 2007). However, the technique has been criticized for its inability to assess implicit affective associations (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). Second, the authors used a behavioral task and a self-report measure to assess the two types of DT. Although these instruments have been used in many studies on DT (Leyro, Zvolensky, & Bernstein, 2010), they have some limitations. First, behavioral tasks that assess DT normally use simplified experimental tasks that are quite different from actual tasks in the natural environment. Second, self-report measures can be influenced by recall bias (Shiffman, Stone, & Hufford, 2006).

The present study aimed to retest the relations between DT and the affects linked to AO/WO in heavy drinkers using alternative methods that complement shortcomings of the instruments used by Seo and Kwon (2016). First, the Extrinsically Affective Simon Task (EAST; de Houwer, 2003), a common instrument to assess implicit affective associations of certain concepts/images, was used to measure the affects linked to AO/WO. Second, the author used ecological momentary assessment (EMA) to measure DT in the natural environment. EMA involves repeated sampling of current behaviors or experiences in real time; EMA minimizes recall bias and maximizes ecological validity (Shiffman et al., 2008).

Based on the results from the prior study, it was expected that the affects linked to AO-Quitting/WO-Persevering would predict DT-Persevering Capacity, while the affects linked to AO-Relieving/WO-Enduring would predict DT-Enduring Capacity.

2. Methods

2.1. Participants

To recruit participants, advertisements were used in an online research participation system for undergraduates taking psychology classes at a national university in Korea. The minimum drinking level for inclusion in this study was 15 standard drinks per week for men and 12 for women (Wiers & Kummeling, 2004). A typical standard drink contains 10 g of pure ethanol (Miller, Heathier, & Hall, 1991). Potential participants were asked about psychiatric history and those who reported any of psychiatric diagnoses were not permitted to participate. Thirty-six (14 women) heavy drinkers were recruited (mean ± standard deviation alcohol use, 31.82 ± 9.14 standard drinks per week) with a mean age of 21.06 ± 2.10 years. The mean score of the Alcohol Use Disorders Identification Test (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) for the sample was 15.17 (SD = 5.12).

2.2. Procedures and measures

This study was approved by the university’s institutional review board on human subject research. After providing informed consent, participants were asked to complete the following assessments: (a) an intake lab assessment (measuring alcohol use problems, depression, anxiety, perceived DT, and affective associations of AO/WO) and training on EMA procedures; and (b) a daily assessment of DT for 7 days. Participants received course credit for participating.

2.2.1. Affective associations

The EAST was used to assess affects linked to AO/WO. In the EAST, participants evaluate words presented in white by pressing a “good” or “bad” key and respond to colored words with the same keys (e.g., pressing “good” for blue and “bad” for green words). Thus, responses to colored words have an extrinsic response valence and an intrinsic response valence that is evoked by the word itself. Responses for which extrinsic and intrinsic response valence are congruent should be faster than incongruent responses. The EAST has been used in many studies and has good validity (e.g., de Houwer & de Bruycker, 2007).

In the current study, the EAST consisted of two practice blocks and subsequent test blocks. In the first practice block, each of the 10 white adjectives (e.g., KIND, HOSTILE) was presented four times in a random order. Participants were instructed to classify the words according to their valence by pressing the P (positive) or Q (negative) key. In the second practice block, each of the four colored words was presented four times in blue and four times in green. Participants were requested to press the P or Q key in response to the color of words (i.e., the P key for blue and the Q key for green). Participants learned the association between blue color and “positive” valence and the link between green color and “negative” valence by performing the two practice blocks. Next, there were four test blocks of 30 trials during which each of the four AO/WO words was presented at least once in each color and each of the 10 adjectives was presented once in white.

Participants reported their most distressful life tasks, and these tasks were used for the AO-Quitting/WO-Persevering trials. For example, a participant reported “writing papers” as the most distressful task. In this case, “writing papers” and “quit writing papers” were used for the WO-Persevering trial and the AO-Quitting trial. The author used “drinking” for the AO-Relieving trial and “no drinking” for the WO-Enduring trial. These words were the colored EAST trials.

Affects linked to AO/WO were assessed by the response latencies in test trials. For example, the intensity of positive affect associated with AO-Relieving was assessed by the response latency in green trials. As mentioned before, responses for which extrinsic and intrinsic response valence are congruent should be faster than incongruent responses. Thus, it was assumed that participants with high level of positive affect associated with AO-Relieving would take longer time to respond to green trials than those with low level of positive affect linked to AO-Relieving. Next, a composite score of affect was calculated by subtracting the negative affect score from the positive affect score because the positive and negative affect linked to the AO-Relieving were competing with each other. These procedures were repeated for AO-Enduring, AO-Quitting, and WO-Persevering. Finally, an affect index was calculated by subtracting the affect scores of WO from the affect scores of AO because the AO and WO options competed with each other.

2.2.2. Distress tolerance

People with high levels of DT withstand distress without drinking for a relatively longer time than those with low levels of DT (e.g., O’Cleirigh, Ironson, & Smits, 2007). Thus, DT-Enduring Capacity was assessed by the time interval between the most distressful life event and a drinking episode. Similarly, people with high levels of DT would continue to perform their distressful tasks for a long time without quitting (e.g., Daughters et al., 2005). DT-Persevering Capacity was assessed by the ratio of the actual amount of time spent on the distressful task to the amount of time allowed to perform the task. The Distress Intolerance Index (DII) was also administered to examine the validity of the two DT indices. The DII is a 10-item questionnaire assessing perceived DT with good reliability and construct validity (McHugh & Otto, 2012).
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