The Association between Cognitive-Emotion Regulation and Emotion Management

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Abstract. We studied the association between cognitive emotion regulation strategies and emotion management skills. A total of 324 college students participated in the study (122 men and 202 women). A demographical information form, the Cognitive Emotion Regulation Questionnaire, and the Emotion Management Skills Scale were used to collect the data. Canonical correlation was used in the analysis, where cognitive emotion regulation strategies and emotions management skills were treated as two sets of variables. The first canonical variate indicated that those individuals who scored higher on catastrophism and self-blame were lower on focusing, planning, evaluating, and putting into perspective. The second canonical variate indicated that cognitive-emotional variables as a set were negatively associated with all the emotion regulation skills with the exception of coping. The third canonical variate indicated that higher rumination and re-focusing on were associated with higher coping and regulation skills but less with emotional display skills.

Keywords: Emotion regulation, emotion management, cognitive, canonical.

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1. INTRODUCTION
The scientific study of emotions has a long history in psychology (Arnold, 1960; James, 1884; Mayer & Geher, 2000). Emotions are usually considered as a type of short-span affects rather than long-lasting traits (Knobloch, & Metts, 2013). Emotions create affective responses that include neural and motivational processes to a stimulus (Izard, 2009) or affective responses to the environment (Frijda, & Mesquita, 1994), which are influenced, among many factors, by life circumstances and close relationships (Thompson, & Calkins, 1996). People have various effective or ineffective coping mechanisms in dealing with negative emotions (Leahy et al., 2011). Gross (2002) mentions that people tend to regulate their emotional states when they become maladaptive. In that kind of a situation, it becomes important to manage emotions in a healthier way. Kopelman, Chen, and Shoshana (2009) emphasize that managing emotions strategically serves positive relational identities for individuals. According to Thompson and Calkins (1996), an extended repertoire of emotion regulation strategies helps individuals gain more positive and healthy life style. Thus, current research aimed to reveal how adaptive and maladaptive cognitive-emotion regulation strategies were associated with emotion management skills. Revealing to what extent maladaptive and adaptive cognitive strategies in emotion-regulation are related with emotion management skills is significant to improve a healthy mood. In short, cognition plays a significant role in personality, psychopathology, and the behavior (Denham, 1986; Dolan, 2002; Fraley et al., 1998).

Different scholars approach to emotions with different theoretical perspectives (Knobloch, & Metts, 2013). For example, discrete models emphasize the distinction between primary and secondary emotions (Ekman et al., 1983; Izard, 2009). According to these models, cognitions have a minimum role in emotions (Knobloch, & Metts, 2013). On the other side, appraisal theories assume that emotions originate from individuals’ interpretations of a fact related to their psychological needs, motives, or well-being (Frijda, 1986; Scherer et al., 2001; Smith, & Kirby, 2004; Smith, & Lazarus, 1993). Whereas dimensional theories focus on the dimensional structure of emotions, prototype approaches emphasize the socially constructed schemas and culture in interpreting, understanding, and expressing emotions (Knobloch, & Metts, 2013).

We have to live with our emotions in harmony, instead of trying to change, hinder, or escape from them (Greenberg, 2018) but they may sometimes become non-adaptive and negatively affect our lives, relationships, and psychological health. When faced with negative life events, people deal with their emotions differently, which in turn create different cognitions such as blaming self or others (Garnefski, & Kraaij, 2007; Garnefski et al., 2007). Gross (1998) defined emotion regulation as an automatic/controlled or consciousness/unconsciousness process. Ample studies have emphasized the cognitive bases of emotion regulation (Ochsner, & Gross, 2008; Martin, & Dahlen, 2005; Rusu et al., 2019). For example, Garnefski and Kraaij (2007) and Garnefski et al. (2001) suggested
nine cognitive regulation strategies: Blaming (self or others), rumination, acceptance, positive re-focus, planning, reappraisal, putting into perspective, and catastrophizing. These strategies are individuals' cognitive responses in dealing with emotional processes. Thompson and Calkins (1996) underline the functionality of emotion regulation and emphasize that different strategies may be used in different circumstances. They also state the importance of emotion regulation in positive health.

Emotion management has gained increasing attention in recent years (Arguedas et al., 2016; Bellocchi, 2019; Logan, 2018). Emotion management may be defined as being aware of which emotions are being experienced at the moment and then understanding, regulating, and working effectively with those emotions. Individuals with better emotion management skills have greater empathy (Hodgson & Wertheim, 2007). According to Lewis (1993), emotion management consists of the awareness of physical responses, distinguishing and verbally and behaviorally expressing emotions and coping with emotions. Managing negative emotions that may reprimand relationships leadsto more concrete and positive close relationships (Kopelman et al., 2009). In contrast, not being able to manage emotions effectively in the face of negative life events leads to behavioral and physical problems that later become greater risk (McCraty et al., 1999).

Studies on emotion management skills show relationships between emotion management and positive psychological traits such as humor (Francis, 1994), forgiveness (Hodgson, & Wertheim, 2007; Kozan et al., 2017), well-being (Sloan, 2008), mindfulness (Goldin, & Gross, 2010; Schutte, & Malouff, 2011), and stress (Mann, 2004). A recent study showed the positive effect of mindfulness-based cognitive therapy in emotion regulation skills (Demir, & Gündogan, 2018). Emotion management has also been found as an important predictor of Internet addiction (Oktan, 2011). Studies also indicate the importance of teaching emotion management skills to children (Rydell et al., 2003; Ulutas, & Omeroglu, 2007; Zeman et al., 2006). Based on the review of contemporary literature, current study aimed to investigate the association, if any, between cognitive emotion regulation and emotion management among young adults in Turkey. Thus, the research question was “Is there any significant correlation between emotion management skills and cognitive-emotion regulation strategies among college students in Turkey?”

2. METHOD

Design of the study is relational survey, a quantitative research method. We aimed to collect the data from a relatively wide range of people in a short time. Correlational research is used to fully understand the relationship between study variables. Correlational research is especially useful in handling problems in education and social sciences because it provides for the measurement of a number of variables and their relationships (Cohen et al., 2005).
Participants
A total of 324 college students willingly participated in the study. Of the group, 202 were women (62.30%) and 122 were men (37.7%). Participants’ ages ranged from 21 to 39 years (M =25.71, SD = 3.76).

Instruments
In addition to Demographical Information Form, the Emotions Management Skills Scale (EMSS) and the Cognitive Emotion Regulation Questionnaire (CERQ) were used to assess emotion management skill levels and cognitive emotion regulation strategies, respectively. Both scales had multiple sub-scales.

The EMSS: The scale developed by Çeçen (2006) to assess emotion management skills of young adults. It is a Likert type scale that consists of 28 items. The scale’s Cronbach alpha was calculated as .83. The scale consists of six factors such as Verbal Expression, Spontaneousness, Body Response Management, Coping, Anger Management, and Recognizing and Accepting Emotions. The Scale items account for 48% of the total variance. Item-total correlations ranged from .30 to .65. The higher scores in the scale refer to higher emotion management skills.

The CERQ: The CERQ was developed by Garnefski et al. (2001) and adapted into Turkish by Onat and Otrar (2010). This questionnaire consists of nine subscales, namely, Blaming (Self and Others), Acceptance, Ruminating, Refocusing, Planning, Positive Reappraisal, Putting into Perspective, and Catastrophizing. Cronbach alpha of the total scale was calculated .78 and item-total correlations ranged from .18 to .46 (Onat & Otrar, 2010).

Data Collection and Analysis
Before the data collection, participants were informed about the general purpose of the study. The data collection process lasted 20 to 25 minutes. For data analysis, canonical correlation was used to investigate the association between a set of cognitive emotion regulation variables and a set of emotion management skills variables. Because both variables consisted of more than one variable, canonical correlation was used to prevent inflated type 1 error. In current canonical correlation analysis, cognitive emotion regulation strategies and emotions management skills were handled as two sets of variables. Before the canonical analysis, data screening was performed and the appropriateness of the data for the analysis was confirmed. Cut-off score was decided as .30 (Tabachnick & Fidell, 2013). Values higher than .30 were interpreted in the results.

3. FINDINGS
Descriptive statistics show that students scored highest on planning (M = 15.01, SD = 3.02) among the cognitive-emotional variables and on verbalizing (M = 25.56, SD = 5.89) among the emotional regulation variables. They scored lowest on catastrophizing (M = 10.03, SD = 3.11) among the cognitive-emotional variables and on anger (M = 10.59, SD = 3.02) among the emotional regulation variables. Bivariate correlations show that the
highest relationships were between catastrophizing and emotional display ($r = -0.40, p<0.001$); planning and coping ($r = 0.36, p<0.001$), and focusing and coping ($r = 0.35, p<0.001$).

Canonical correlation was conducted between a set of cognitive-emotional variables and a set of emotional regulation skills. The cognitive-emotional set included Blaming (Self and Others), Acceptance, Rumination, Refocusing, Planning, Positive Reappraisal, Putting into Perspective, and Catastrophizing. The emotional regulation skills set included Verbal Expression, Spontaneousness, Body Response Management, Coping, Anger Management, and Recognizing and Accepting Emotions.

Only three canonical correlations were statistically significant. The first canonical correlation was $0.57$ and accounted for $33\%$ overlapping variance ($\lambda = 0.46, F(45, 1389) = 5.86, p<0.001$). The second canonical correlation was $0.45$ and accounted for $20\%$ overlapping variance ($\lambda = 0.25, F(32, 1148) = 4.03, p<0.001$) and the third canonical correlation was $0.35$ and accounted for $12\%$ overlapping variance ($\lambda = 0.14, F(21, 894) = 2.61, p<0.001$). The remaining canonical correlations were statistically zero.

With correlation coefficients $>0.30$, all variables except acceptance and rumination in the cognitive-emotional set and all variables except of body response management in the emotional managementskills set were correlated with the first canonical variate. The first canonical variate indicates that those individuals who scored higher on blaming themselves ($0.32$) or others ($0.60$), tend to catastrophize ($0.58$), lower on focusing ($-0.50$), planning ($-0.72$), evaluation ($-0.62$), and putting into perspective ($-0.35$) are associated with lower verbalizing ($-0.60$), emotions ($-0.69$), coping ($-0.60$), and anger management skills ($-0.56$).

The second canonical variate indicates that cognitive-emotional variables as a set was negatively associated with all the emotional regulation skills with the exception of coping. As the cognitive-emotional variables increased emotional regulation skills decreased.

After accounting for the relationships between cognitive emotion regulation strategies and emotion management skills in the previous two canonical variates, the third canonical variate indicates that rumination was significantly associated with higher spontaneousness but lower with body response management and coping. Also, refocusing was associated with higher body response management and coping. All canonic correlations between two sets of variables were given in Table 1.
Table 1
Results of Canonical Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>1. Canonical variate</th>
<th>2. Canonical variate</th>
<th>3. Canonical variate</th>
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<tbody>
<tr>
<td></td>
<td>$r_s$</td>
<td>Coefficient</td>
<td>$r_s$</td>
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<tr>
<td>Cognitive Emotion Regulation (Set 1)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Blaming (Self)</td>
<td>.32</td>
<td>.23</td>
<td>.40</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.14</td>
<td>-.02</td>
<td>.43</td>
</tr>
<tr>
<td>Rumination</td>
<td>-.09</td>
<td>-.01</td>
<td>.58</td>
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<tr>
<td>Refocusing</td>
<td>-.50</td>
<td>-.18</td>
<td>.36</td>
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<tr>
<td>Planning</td>
<td>-.72</td>
<td>-.43</td>
<td>.38</td>
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<tr>
<td>Reappraisal</td>
<td>-.62</td>
<td>-.24</td>
<td>.65</td>
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<tr>
<td>Putting into Perspective</td>
<td>-.35</td>
<td>-.03</td>
<td>.39</td>
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<tr>
<td>Catastrophizing</td>
<td>.58</td>
<td>.22</td>
<td>.59</td>
</tr>
<tr>
<td>Blaming (Others)</td>
<td>.60</td>
<td>.44</td>
<td>.35</td>
</tr>
<tr>
<td>Variance Percentage</td>
<td>.23</td>
<td>.22</td>
<td>.08</td>
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<tr>
<td>Redundancy</td>
<td>.07</td>
<td>.04</td>
<td>.01</td>
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<td>Emotion Management Skills (Set 2)</td>
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<td></td>
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<tr>
<td>Verbal Expression</td>
<td>-.60</td>
<td>-.32</td>
<td>-.33</td>
</tr>
<tr>
<td>Spontaneousness</td>
<td>-.69</td>
<td>-.50</td>
<td>-.46</td>
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<tr>
<td>Body Response Management</td>
<td>-.15</td>
<td>.05</td>
<td>-.68</td>
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<tr>
<td>Coping</td>
<td>-.60</td>
<td>-.57</td>
<td>.61</td>
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<tr>
<td>Anger Management</td>
<td>-.56</td>
<td>-.23</td>
<td>-.21</td>
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<tr>
<td>Variance Percentage</td>
<td>.31</td>
<td>.24</td>
<td>.20</td>
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<tr>
<td>Redundancy</td>
<td>.10</td>
<td>.05</td>
<td>.02</td>
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<tr>
<td>Canonical Correlation Coefficient ($R_c$)</td>
<td>.57</td>
<td>.45</td>
<td>.35</td>
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<tr>
<td>$R_c^2$</td>
<td>%33</td>
<td>%20</td>
<td>%12</td>
</tr>
</tbody>
</table>

Coefficient = Standardized Canonical Coefficients
$r_s$ = Structure Coefficients (Canonical Loadings)
4. RESULTS, DISCUSSION, AND SUGGESTIONS

Association between cognitive emotion regulation strategies and emotion management skills was studied in the current research. According to the results, students scored highest on planning among the cognitive-emotional variables and on verbalizing among the emotional regulation skills. They scored lowest on catastrophizing among the cognitive-emotional variables and on anger management among the emotional regulation skills. These results support the findings of Garnefski et al. (2001) who found that catastrophizing was one of the least used cognitive regulation strategies. Bivariate correlations showed that the highest relationships were between catastrophizing and emotional display; planning and coping, and focusing and coping. Moreover, canonical correlation results revealed that individuals who blame themselves and others more, and who are more catastrophizing, lower on focusing, planning, and evaluation, and lower on putting into perspective are associated with lower verbalizing, emotions, less coping, and anger. Similar to our results, studies show associations between cognitive emotion regulation strategies and negative life events (Garnefski et al., 2004; Martin & Dahlen, 2005). Garnefski et al. (2001) found that cognitive coping strategies were important in dealing with negative life events, depression, and anxiety. They argue that adaptive strategies are negatively related to depression and anxiety whereas maladaptive strategies are positively related to negative life events. Their results and the results of the current study share great similarities.

Tugade and Fredrickson (2007) discuss the importance of positive emotion regulation strategies on resilience and their findings indicate that more maladaptive cognition-emotion regulation strategies are associated with less emotion management skills. Hodgson and Wertheim (2007) report that people with better emotion management skills are able to regulate their emotions in a healthier way rather than being negatively affected by them. According to the second canonical variate in our results, cognitive emotion regulation strategies were found to be negatively related to all emotion management skills, except coping. Scoring higher on cognitive emotion regulation skills related to lower emotion management skills. McCraty et al. (1999) stated that unmanaged emotional responses to stress cause behavioral problems and increase the risks for later in life. In the current findings, after accounting for the relationships between cognitive emotion regulation strategies and emotion management skills in the previous two canonical variates, the third canonical variate indicated that more rumination was associated with more expression of emotions spontaneously but less with of body response management and coping. In addition, positive refocusing was associated with better management of negative body response and coping. Mikolajczak, Nelis, Hansenne, and Quoidbach (2008) revealed that people with higher emotional control were found to use adaptive strategies rather than maladaptive strategies.

Hong (2007) revealed that rumination predicted the withdrawal of the problem which then leads to more depressive symptoms similar to the findings of current research. In addition, Burwell and Shirk (2007) reported that the sub-dimensions of rumination
predicted coping strategies. That is, whereas brooding –dimension of rumination-predicted maladaptive coping, reflection predicted adaptive coping. These findings explain our findings that rumination was associated with spontaneous expression of emotions. In sum, current study revealed that cognitive emotion-regulation skills were associated with emotion management skills. Especially, higher maladaptive cognitive-emotion regulation skills were associated lower emotion management skills. On the contrary, adaptive cognitive-emotion regulation skills such as refocusing were associated with better emotion management skills. These findings emphasized that maladaptive and adaptive cognitive emotion-regulation skills were related to better or worse emotion management skills.

Limitations and Suggestions
This study has some limitations. First, current study is limited to cognitive emotion regulation strategies and emotion management skills. For future studies, different variables should be studied with emotion regulation and management. Second, this study was conducted among college students, thus the results are only generalizable to similar populations. In the future, different samples should be studied in the context of emotion regulation and management. Third, results should no be interpreted in terms of causality between variables, only associations were investigated. Thus it is not appropriate to conclude cognitive emotion regulation cause emotion management or vice versa. Lastly, current study uses self-report measures and thus may suffer from common method bias. Current study revealed the significant associations between cognitive emotion regulation strategies and emotion management skills. Teachers, parents, counselors, and psychologists would focus more on emotion regulation and management skills for developing adaptive strategies toward negative life events. Counselors and psychologists emphasize more emotion regulation and management in their sessions with college students. Current study also revealed that negative cognitive emotion regulation strategies were not associated with emotion management skills. Thus, teachers and families must teach students and children to use more positive emotion regulation strategies in managing their own emotions. Lastly, schools, teachers, counselors and families should focus more on the develop students’ emotional skills.

References
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