Metacognitive structures of patients with and without cancer

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INTRODUCTION

Metacognition is a cognitive process which contain appraisal, monitoring, and control of thinking. It is considered an ability to control one's own perceptual and cognitive abilities. The metacognitive model of emotional disorders suggest that emotional disorders are maintained by maladaptive thinking patterns which are activated by underlying metacognitions. The metacognitive factors have been involved in psychological disorders including post-traumatic stress disorder, depression and anxiety, and emotional stress.

Research examining the relationship between metacognitions and cancer has only recently began to emerge. Maladaptive metacognition style was associated with greater fear of cancer recurrence among patients with breast cancer. Negative beliefs about the consequences of worry were correlated with high levels of fear of cancer recurrence. Patients with breast cancer showed higher levels of metacognitions compared with the control group. Some studies showed metacognitions and depressive symptoms were more prevalent in advanced cancer than in earlier stages, some studies showed the reverse.

METHODS

Participants

491 participants (279 patients with cancer, 212 control patients) participated in this study. Control group consisted of volunteer patients who sought services at Family Medicine Department for non-cancer related health issues. Participants in the control group did not have personal history of cancer. 47% of the patients were male, 53% were female; 28% of the control group were male and 72% were female. Mean age of

patients (M = 54.73, SD = 12.12) was greater than the mean age of the control group (M = 51.15, SD = 12.86). Majority of participants from both groups were born in the Marmara region, the second largest group of patients were from the Black Sea region, the second largest group of controls were from Central Anatolia.

Measures

The Metacognitions Questionnaire 30 (MCQ-30, 13) assesses 5 distinct metacognitive factors: 'Positive beliefs about worry'; 'Negative beliefs about worry'; 'Cognitive confidence'; 'Need to control thoughts'; and 'Cognitive self-consciousness. Higher scores indicate higher levels of unhelpful metacognitions.

Procedure

Patients were either followed by medication management, chemotherapy, radiotherapy, and/or operation. Frequency of chemotherapy cycles ranged from 4 to 8. Duration of radiotherapy ranged from 2 to 7 weeks. Of those whose treatment lasted longer than a week, patients received irradiation 5 days a week, followed by a 2-day break. Patients who went under radiotherapy received irradiation 10 to 15 minutes per session.

RESULTS

One-way between subjects ANOVA showed there was a significant effect of group on total MCQ-30 score at the $P < .05$ [$F(1, 489) = 56.57$, $P = .00$]. The mean MCQ-30 score was 77.32 for the patient group and 67.02 for the control group. Individuals who were born in the Northern region of Turkey had the highest scores on the MCQ-30. A MANCOVA, controlling for place of birth, indicated patients (M = 14.39) scored higher than the control group (M = 12.59) on the

positive beliefs, [$F(1, 488) = 18.81$, $P = .00$, $\eta^2 = .04$]; on the cognitive confidence, [$F(1, 488) = 6.91$, $P = .01$, $\eta^2 = .01$]; patients (M = 13.97, SD = 5.01), control group (M = 12.83)]; on negative beliefs about worry [$F(1, 488) = 26.50$, $P = .00$, $\eta^2 = .05$]; patients (M = 18.09), control group (M = 15.56)]; on cognitive selfconsciousness, [$F(1, 488) = 36.35$, $P = .00$, $\eta^2 = .07$, patients (M = 15.05), control group (M = 12.98)], and on the need to control thoughts [$F(1, 488) = 79.92$, $P = .00$, $\eta^2 = .14$, patients (M = 16.30), control group (M = 13.09)]. There was a significant main effect of stage [$F(2, 255) = 5.28$, $P = .01$, $\eta^2 = .04$, early stage (M = 81.49), locally advanced stage (M = 80.31), metastatic stage (M = 71.86)]. There was a significant main effect of chemotherapy [$F(1, 255) = 5.08$, $P = .03$, $\eta^2 = .02$, no chemotherapy (M = 74.87), chemotherapy (M = 80.79)] at the $P < .05$ level. Those who did not have operation but had chemotherapy had the highest levels of negative metacognitions (M = 87.62). Those who neither had operation nor had chemotherapy had the lowest level of negative metacognitions (M = 71.76). Those who were in locally advanced stage, did not have operation but had received or was receiving chemotherapy had the highest levels of

negative metacognitions (M = 96.08). Those who were on the locally advanced stage who neither had chemotherapy nor had operation who the lowest levels of negative metacognitions (M = 67.35).

DISCUSSION

Patients with cancer scored higher on the MCQ-30 than the controls. The patients scored consistently higher on all subscales of the MCQ-30 compared with the control group. For individuals with cancer, those who were in early stages of cancer had higher levels of negative metacognitions. Those who were in the metastatic stage had the lowest levels of negative metacognitions. Patients who received chemotherapy had higher levels of negative metacognitions.

Estimated marginal means of the MCQ-30 total score for patients who did and did not receive chemotherapy.