

## Perception of problem solving skills in cancer patients according to certain variables and control focus

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### Abstract

**Objective:** To determine the perception of problem-solving skills in cancer patients related to control focus.

**Methods:** This cross-sectional descriptive study was conducted at the Manisa State Hospital, Manisa, Turkey, between May and December 2015, and comprised outpatients monitored by the Radiation Oncology department. Focus of control scale, problem solving inventory and a self-generated socio-demographic form were used as data collection instruments. SPSS 15 was used for data analysis.

**Results:** Of the 263 subjects, 133(50.6%) were women and 130(49.4%) were men with an overall mean age of 56.98±12.32 years. Personality characteristics and their type of control focus affected problem solving skill ( $p<0.05$ ). Gender, education level, income level, and status of obtaining help from family-type health professionals had an effect on their control focus type and problem solving ( $p<0.05$ ).

**Conclusion:** Personality characteristics and their type of focus influenced perception of problem solving in cancer patients.

**Keywords:** Cancer, External control, Internal control, Problem solving inventory, Focus of control scale, Health professionals, Psychiatric nurse. (JPMA 68: 1183; 2018)

### Introduction

Cancer is the leading health problem at present. At the turn of the century, it ranked seventh and eighth among fatal illnesses, and in Turkey, as in many countries in the rest of the world, it was second to heart diseases.<sup>1</sup> Cancer imposes a burden which cuts a person off from everything. A person whose health is destroyed experiences feelings of denial, anger and sorrow. After a few weeks, the patient leaves off trying to adapt to this period in their life. However, sometimes this period of life lengthens. Anxiety and worry turn into clinical depression.<sup>2</sup>

In the past 20 years, one of the factors related to or changing along with psychopathology is the control focus view.<sup>3</sup> Individuals who perceive their focus of control in their own behaviour and abilities are said to be internally controlled; those who perceive it as outside themselves in things like chance, luck or fate, are said to be externally controlled.<sup>4</sup> Many studies examining internal and external control beliefs as personality characteristics have shown that the effects on personality of a tendency to have an internal focus of control to have more positive results than a tendency to have an external

focus of control. External control belief is more associated with low self-esteem, depression, headaches, other psychophysiological symptoms and psychopathology.<sup>4-7</sup> Related to this, it has been found that individuals with an internal focus of control adopt a more active attitude to problem solving, and that individuals who ascribe lack of success to themselves and behaviour which they can control record more progress in work and have high work motivation.<sup>8,9</sup> In many studies, the belief of control is taken as a vital psychological need, and is evaluated as an important factor in people's adjustment to adverse events which happen to them.<sup>10</sup> The concept of focus of control presented by Rotter is described as the relation between what people do and what they get at the end of it. Many studies in the literature have proved that focus of control has a relationship with becoming ill and illness-related deaths.<sup>11-13</sup> The effect of treatment expectations in adaptation to cancer and the role of focus of control belief have been researched, and it has been found that there is less of a relationship between illness severity and depression in those who believe they can control their illness themselves than in those who do not.<sup>3,14</sup> Those who believe that their health is under the control of chance (external control) feel a high level of anxiety and uncertainty about their futures. It is thought that there may be a relationship between problem solving and focus of control in such individuals.<sup>15</sup>

The current study was planned to determine the perception of problem solving skills in cancer patients in

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relation to certain variables and control focus.

### Patients and Methods

This cross-sectional descriptive study was conducted at the Radiation Oncology Department of Manisa State Hospital, Manisa, Turkey, between May and December 2015, and comprised outpatients. According to data from six months in the 2014 Basic Health Statistics Module, 300 outpatients had been monitored by the department. Simple random sampling method was used for sample selection. With the confidence interval (CI) of 95% and desired precision of  $\pm 2\%$ , the minimum required sample size was calculated as 158 participants.<sup>16</sup> We raised the sample size to compensate for any missing data or unexpected faults that can occur during data entrance. Written approval was obtained from the Faculty of Medicine Ethics Board Directorate, Celal Bayar University, Turkey, and the Chief Physician of the Oncology Department of the Manisa State Hospital. Informed consent was obtained from all the individual participants.

Data-collection instruments included the Focus of Control Scale (FCS), the Problem Solving Inventory (PSI) and a self-generated socio-demographic form which included questions on patients' personal characteristics and their diagnosis, history of cancer in their families, and their spiritual values in coping.

The 47-item Rotter's internal-external FCS was adapted to Turkish for the first time in 1991, and the validity and reliability of the scale were tested in 2002.<sup>3,11</sup> FCS consists of five subscales: personal control, belief in chance, pointlessness of endeavour, fatalism, and belief in an unjust world. The total score of the scale was used in this study. Evaluation was done through a five-way Likert form: 1, It does not fit at all; 2, It doesn't fit much; 3, It fits; 4, It fits well; 5, It fits completely. The possible scores obtainable from the scale ranged from 47 to 235. A higher score showed a belief in the external focus of control, and a low score showed a tendency towards the internal focus of control. In evaluation of the scale, no cut-off points were found.

The PSI measuring the self-perception of an individual's problem-solving skills was developed in 1993 and is made up of 35 items and three factors. The first of three factors is problem solving confidence (11 items), the second one is problem-avoidance approach (16 items), and the third one is control (15 items).<sup>17</sup> The PSI is a summary of these three factors. It is a Likert-type scale with items scored from 1 to 6 which can be applied to adolescents and adults. The choices range from "I always behave that way" to "I never behave that way". In scoring the scale, items 9, 22 and 29 are not included, and items 1, 2, 3, 4, 11, 13, 14,

15, 17, 21, 25, 26, 30 and 34 are scored inversely. There are six factors on the scale: hasty approach (13, 14, 15, 17, 21, 25, 26, 30, 32), thoughtful approach (18, 20, 31, 33, 35), avoidance approach (1, 2, 3, 4), evaluative approach (6, 7, 8), self-confident approach (5, 23, 24, 27, 28, 34), and planned approach (10, 12, 16, 19). In this study, the total score of the PSI was used. The lowest possible score is 32, and the highest is 192. In evaluating the scale, no cut-off point was found. A low PSI score shows that problem solving skills are high, while a high score indicates that problem solving skills are weak.<sup>17</sup> SPSS 15 was used for data analysis. Shapiro-Wilk-W test was used for the normal distribution. The normal distribution was found to be appropriate for FCS ( $0.429 > 0.05$ ) and PSI ( $0.604 > 0.05$ ). One-way analysis of variance (ANOVA), Kruskal-Wallis and correlation tests were also used.

### Results

Of the 263 subjects, 133(50.6%) were women and 130(49.4%) were men with an overall mean age of  $56.98 \pm 12.32$  years. Besides, 153(58.2%) were educated to primary school level, 216(82.1%) were married, and 31(11.8%) were working (Table-1).

It was seen that 95(36.1%) patients had a relative with a diagnosis of cancer. According to their statements, all 263(100%) patients were knowledgeable about their illness, 121(46%) perceived their physical health as good, 126(47.9%) perceived their mental health as good, and 123(46.8%) generally perceived their lives as good. Also, 103(39.1%) patients stated that they had felt upset when they received their diagnosis, and 105(39.9%) thought they had become ill because of stress.

The patients' mean total score on the FCS was  $127.85 \pm 16.89$ . The mean sub-scale scores were: personal control  $39.59 \pm 13.89$ , belief in chance  $32.95 \pm 7.29$ , the meaningless of making an effort  $29.05 \pm 7.24$ , fatalism  $11.94 \pm 2.62$ , and belief in an unjust world  $14.26 \pm 4.65$ . The patients' mean total PSI score was  $82.04 \pm 21.04$ . The mean scores on the hopelessness subscale were: hasty approach  $31.85 \pm 6.72$ , thoughtful approach  $9.81 \pm 4.81$ , avoidance approach  $11.21 \pm 5.83$ , evaluative approach  $6.09 \pm 3.27$ , self-confident approach  $14.71 \pm 5.69$ , and planned approach  $8.34 \pm 3.72$ .

The relationship was investigated between the patients' socio-demographic. The scores obtained by patients aged 56 or more from the personal control subscale of the FCS ( $p < 0.05$ ) and the FCS ( $p < 0.05$ ) were significantly high. The scores obtained from the belief in chance subscale of the FCS ( $p < 0.05$ ), the FCS ( $p < 0.01$ ), PSI self-confident approach sub-dimension ( $p < 0.01$ ) and PSI planned approach sub-dimension ( $p < 0.05$ ) by the female patients

**Table-1:** The distribution of patients' socio-demographic characteristics.

Socio-demographic characteristics		N	%
< 56 age		115	43.7
57 age <		148	56.3
<b>The mean age of patients: 56.98±12.32</b>			
Gender	Female	133	50.6
	Male	130	49.4
Education Status	literate	60	22.8
	primary school	153	58.2
	Secondary school	16	6.1
	High school	20	7.6
	Preliminary license	9	3.4
	License	5	1.9
Marital status	Single / widowed / separated from his wife	47	17.9
	The married	216	82.1
Working Status	Yes	31	11.8
	No	232	88.2
Total		263	100

**Table-2:** Relationship Between Focus of Control Scale (FCS) and Problem Solving Inventory (PSI) Mean Scores of Cancer Patients.

		PSI Hasty Approach	PSI Thoughtful Approach	PSI Avoidance Approach	PSI Evaluative Approach	PSI Self-confident Approach	PSI Planned Approach	PSI Total
FCS Personal Control	r	0.068	0.381**	0.230**	0.368**	0.339**	0.289**	0.373**
	p	0.271	0.000	0.000	0.000	0.000	0.000	0.000
FCS Belief in chance	r	0.127*	-0.160**	-0.123*	-0.076	-0.106	-0.102	-0.089
	p	0.040	0.010	0.046	0.217	0.085	0.098	0.150
FCS Pointlessness Of Endeavour	r	0.275**	-0.002	0.209**	-0.020	0.102	0.045	0.178**
	p	0.000	0.980	0.001	0.744	0.099	0.472	0.004
FCS Fatalism	r	0.100	-0.266**	-0.114	-0.262**	-0.225**	-0.203**	-0.198**
	p	0.105	0.000	0.065	0.000	0.000	0.001	0.001
FCS Belief In An Unjust World	r	0.228**	-0.182**	-0.047	-0.093	-0.148*	-0.122*	-0.058
	p	0.000	0.003	0.450	0.132	0.016	0.049	0.351
FCS Total	r	0.307**	0.152*	0.195**	0.195**	0.201**	0.147*	0.298**
	p	0.000	0.014	0.001	0.002	0.001	0.017	0.000

\*\* The correlation is significant p <0.01 level. \* Correlation is significant p <0.05 level.

FCS: Focus of control scale

PSI: Problem solving inventory.

were significantly higher than were those obtained by the male patients.

It was found that the lower the patients' education level was, the higher were their scores on the PSI belief in chance sub-dimension (p<0.05), PSI pointlessness of endeavour (p<0.01), PSI fatalism (p<0.01) and PSI belief in an unjust world dimensions (p<0.05).

Patients whose income was less than their expenditure obtained significantly high scores from the FCS (p<0.01), its personal control (p<0.01), and belief in chance (p<0.05) subscales, and from the PSI (p<0.01) and its thoughtful approach (p<0.05), avoidance approach (p<0.01),

evaluative approach (p<0.05), and self-confident approach (p<0.01), and the PSI planned approach (p<0.05).

Patients with extended families obtained significantly higher scores from the FCS (p<0.01) and its personal control (p<0.01), fatalism (p<0.01), belief in an unjust world (p<0.01) dimensions, and from the PSI (p<0.01) and its thoughtful approach (p<0.01), avoidance approach (p<0.01), evaluative approach (p<0.01), self-confident approach (p<0.01), and planned approach (p<0.01) subscales.

Patients who stated that they did not share their spiritual

needs with health professionals were found to have significantly higher scores on the personal control subscale ( $p < 0.01$ ), while those who stated that they did share their spiritual needs were found to have significantly higher scores for the pointlessness of endeavour ( $p < 0.01$ ) and fatalism ( $p < 0.01$ ) subscales.

As the patients' scores for FCS and its subscales increased, so did their scores for PSI and its subscales (Table-2).

## Discussion

A positive correlation was found between FCS and PSI scales used in the study, with difficulties in problem solving being related to the external focus of control. These findings support evidence in literature.<sup>11-13</sup>

It was seen that as the level of internal control increased, so did the problem solving skills. In another study, it was observed that individuals who had the internal control of focus accorded more importance to constructive and positive solution processes, were more open, and displayed their feelings more clearly.<sup>13,17-19</sup> When individuals encounter problems, they assess both themselves and the problem. An individual for whom the problem is so difficult as to be insoluble and who feels that he himself has no power over the problem will not take any steps to find a solution. A person's evaluation of both the problems faced and of himself will have a clear effect on the solution process.<sup>12</sup> An individual with the internal focus of control will take on more responsibility in solving the problem because he is able to see his own contribution to the problem. In this way, when a problem occurs, the individual will work out what needs to be done and make an effort to develop ways to solve the problem. When an individual with the external focus of control encounters a problem, he or she will not see his/her contribution to the problem or will not believe that he/she can influence the result, and so he/she will not make the same effort.

It was found in the study that the factors of age and gender had an effect on self-confident approach and planned approach problem solving skills and in focus of control ( $p < 0.05$ ). Here it was found that the males had the internal focus of control more than the females, and that the internal focus of control tendencies increased with age. It was found in the study that gender differences affected the problem solving skills of self-confident approach and planned approach. The perceived problem solving skills of the male patients in the study were higher than those of the female patients. It may be said that when it is considered that an increase in the focus of control indicates outside control, this result shows that female patients have a more external focus of control

than male patients. This result is not surprising, considering that in the conditions of Turkey, women are brought up to be withdrawn, submissive and dependent.

It was found in the study that education level did not have an effect on problem solving ( $p > 0.05$ ). It has been found in other studies that the problem solving of participants with an education level of middle school or less was at a lower level than that of those educated to university graduate level or higher. Studies in the literature generally show a correlation between low education level and problem solving.<sup>20,21</sup> Seen from the point of view of tendencies towards the external focus of control, the participants with an education level of high school or lower had the external focus of control more than those with a university graduate or higher level of education. Studies were encountered which indicated that those with a low level of education did not have the necessary skills to cope with the problems and stress which they faced. Not being able to display suitable coping skills makes problems even more insoluble and can push people to have more external focus of control.<sup>21</sup> Thus it may be thought that education level and self-respect are correlated.<sup>15</sup> It is possible to find studies which indicate that self-respect is higher in individuals with a high level of education.<sup>5</sup> Considering individuals with a greater power of control against those who have a high level of self-respect, they try to solve the problems which they encounter using active coping skills. These approaches indicate that they had the internal focus of control.<sup>22</sup> In the light of this information, it can be seen that individuals with a low level of education have more external focus of control. It was found that the personality trait of being open to novelty was affected by the basic variable of education. Patients with an educational level of middle school or lower were found to have a tendency to be less open to novelty than those with a university education. Those with a high level of education can be thought to accord more importance to such things as enquiry, learning new things and discovery, and to be more open to developing their goals and themselves.

It emerged in the present study that the income level had an effect on problem solving and focus of control ( $p < 0.05$ ). As the income level of participants fell, their problem solving skills fell and they used more external focus of control. Income level is an important factor which determines an individual's standard of living and provides a financial resource to resolve many problems which may be met. This finding may explain the fact that when problems are insoluble because people have low income and feel thwarted, it causes them to have the external focus of control.

In terms of the family type, it was found that problem solving and focus of control were affected in patients with extended families. Their mean scores for the focus of control and problem solving were higher than the scores of those with other family types, and the difference was statistically significant ( $p < 0.05$ ). According to a study, in a family in which members are able to give an emotional response, the family members can express not only happiness, enjoyment and joy, but also feelings such as sadness, grief and boredom in words and behaviour.<sup>23</sup> In this connection, it was thought that an increase in the number of family members may make the expression of emotional reactions in an intentional way and for its reflection in behaviour more difficult.<sup>23,24</sup> It can be said that in a broken family there is little social support in problem solving, and so individuals seek alternative solutions in solving problems by themselves.

### Conclusion

Personality characteristics and type of focus in cancer patients were influenced by their problem solving. Gender, education level, family type and support from health professionals, psychiatric nurse had an effect on patients' focus of control type and problem solving. It is important to change the perceptions of the individual towards their condition and to what they have in the future, and to increase their beliefs that they can control their lives.

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