




Autonomy Support, Life Satisfaction, and Quality of Life of Cancer Patients

Psychometric Properties of the Turkish Version of the Health Care Climate Questionnaire

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Abstract: Previous research shows that perceived autonomy support is significantly associated with positive health outcomes for different clinical populations. However, there is not a standardized measurement tool that assesses perceived autonomy support for the Turkish population. This study translated the Health Care Climate Questionnaire (HCCQ), a perceived autonomy support measurement tool, into Turkish and investigated the factorial structure of the questionnaire with a group of patients with cancer. This study used a convenience-sampling method with 192 people with cancer. The participants were recruited from a major cancer institute and a non-profit organization in Turkey by research partners. Volunteer participants either filled out a hard copy of a survey packet or completed the survey packet through a secured online survey tool website (i.e., <https://www.surveymonkey.com>). In addition, a closed Facebook group for cancer survivors in Turkey was used to advertise the study's link. The results indicated the participants perceived a moderate level of autonomy support. In comparison to German and US populations, perceived autonomy support was low among Turkish cancer patients. The results also indicated that the HCCQ has a two-factor measurement structure. Correlations with external variables indicated that the scores of HCCQ were significantly positively associated with life satisfaction and quality of life of cancer patients and negatively associated with cancer related symptoms (e.g., fatigue).

Keywords: health care, cancer, autonomy support, quality of life

Communication between patients and health care professionals plays a key role in overcoming the psychological burden of a cancer diagnosis (Shumway et al., 2015) and may have a significant effect on health and well-being of people with cancer. This study, using a positive psychological approach investigated the relationship between autonomy support and well-being of Turkish cancer survivors by operationalizing well-being as functioning and satisfaction with life. Presently, there is an increasing interest in patients' rights and incorporating patients' views into healthcare treatment in Turkey (Organization for Economic Co-operation and Development [OECD], 2014).

Globally, health and rehabilitation service providers are beginning to use the Self-Determination Theory (SDT) framework to motivate patients to actively engage in their treatment and collaborate with their treating physicians to promote patient-centered care (Fitzgerald et al., 2015).

A key concept of SDT is the idea that social contexts significantly affect the motivation, performance, and well-being of individuals who operate within these contexts (Deci & Ryan, 1985; Ng et al., 2012; Ryan & Deci, 2000; Williams et al., 2006). Autonomy support is used to characterize the quality of these healthcare and social environments. For healthcare providers to support client autonomy, it is necessary to respect and acknowledge patients' perspective by supporting their initiatives, offering choices about treatment options, providing relevant information, minimizing pressure and control (Williams et al., 2006).

Research indicates that perceived autonomy support is significantly related to self-motivation, satisfaction, and performance (Baard et al., 2004; Levy et al., 2008). Therefore, providing autonomy support for patients and involving them in decision-making can have a significant impact on lives of people with chronic health conditions

and disabilities, including people with cancer. Informed and shared decision-making used by healthcare professionals result in higher levels of patients' satisfaction with their treatment and physical and mental health among people with cancer when compared to paternalistic decision-making (Ashraf et al., 2013). When patients perceive healthcare professionals as more understanding and empathetic, they are more likely to comply with treatment guidelines and be satisfied with treatment outcomes (Levy et al., 2008; Sultan, 2013). Cancer survivors who were motivated to meet physical activity guidelines were reported to have higher levels of autonomy support (Milne, Wallman, Guilfoyle, Gordon, & Courneya, 2008), and cancer patients with more autonomy support also reported to have less depression and anxiety and higher levels of quality of life (Shumway et al., 2015; Sultan, 2013). Autonomy support may facilitate the shared decision-making process and working alliance between health care professionals and patients, resulting in better health outcomes.

However, providing autonomy support may be significantly influenced by cultural values. In comparison to the individualist orientation of the Western societies (e.g., US and European societies), Turkey has a strong collectivist cultural orientation (Ayçiçeği-Dinn & Caldwell-Harris, 2011, 2013; Göregenli, 1997). There is a higher interdependence where family memberships and social roles are one of the major determinants of one's self and identity (Imamoğlu, & Karakitapoğlu-Aygün, 2004) with a higher level of power distance reflecting a stronger hierarchical system (Pasa, Kabasakal, & Bodur, 2001). In a hierarchical collectivist society, support and encouragement of the physicians may significantly influence patients' motivation to engage in medical treatments and other meaningful activities. Turkey has a hierarchical, public-based healthcare system. Patients are more likely to perceive healthcare professionals as authority figures, expect to be told what to do, and establish a warm and paternalistic relationship with healthcare professionals (Carteret, 2010; Cirhinlioglu, 2001; Murgic et al., 2015).

Due to this paternalistic relationship between patients and physician, survivors of cancer may assume that physicians make the best decisions for their treatment process. Turkish people also understand and accept that physicians are not required to reach consensus about the treatment process with patients (Güven, 2010). Further, in a collectivist culture, physicians are unlikely to share the truth of their clients' diagnosis or prognosis (Güven, 2010; Sen, 1997), as Turkish people tend to equate cancer with death; and they may think that their family and social roles may get disrupted by cancer diagnosis (Kaya et al., 2019). There is clearly a lack of collaborative communication, shared decision-making, and two-way communication of

information between cancer survivors and physicians in Turkey (Terzioglu, 2008). It is important to note that the relationship between healthcare professionals and cancer patients is not so different in terms of autonomy support and life satisfaction than it is for other types of patients that are being treated. Despite these cultural norms, current research from Western countries indicates that being involved in decision-making and being knowledgeable about treatment options has a positive effect on the health behaviors of people with chronic health conditions and disabilities (Surbone et al., 2012). However, there is no research that provides information regarding the relationship between autonomy support and life satisfaction for Turkish cancer patients.

One of the tools that measures perceived autonomy support is the Health Care Climate Questionnaire (HCCQ) developed by Williams et al. (1996). The HCCQ was originally validated to assess health care professionals' support for autonomy in a weight-loss study by Williams et al. (1996); however, several versions of the questionnaire have since been used and adapted in nutrition counseling, exercise, smoking cessation, medication adherence, and diabetes care research (Schmidt et al., 2012). The questionnaire has been validated in various countries, including France (Spitz et al., 2014) and Germany (Schmidt et al., 2012). The validation studies found an underlying single factor structure, similar to the original English version. However, the HCCQ has not yet been translated and validated for Turkish cancer patients and cancer survivors.

Purpose

The purpose of this study is twofold: (a) to examine the measurement structure and psychometric properties of the Turkish version of the HCCQ (see Appendix) in order to facilitate its use with patients with cancer in Turkey; (b) to evaluate the relationship between perceived autonomy support and well-being of people with cancer in order to improve communication and relationships between healthcare professionals and patients with cancer in Turkey. It is hypothesized that autonomy support would have positive relationship with well-being of Turkish cancer survivors. Specifically, the following research questions will be investigated:

Research Question 1 (RQ1): What are psychometric properties of the Turkish version of Health Care Climate Questionnaire?

Research Question 2 (RQ2): What is the relationship between perceived autonomy support and well-being of people with cancer in Turkey?

Method

Participants and Procedures

This study included 192 people with cancer recruited from the Hacettepe University Cancer Institute in Turkey and a non-profit organization in Turkey. After receiving ethical approval from the University of Wisconsin Madison and Hacettepe University, the participants were recruited with help of research partners using social media and individual communication. All participants were informed of the purpose of the study and received instructions for participation. The participants were informed that the participation was completely voluntarily, and participating in the study would not affect their relationships with their healthcare providers. Furthermore, participants were briefed about the purpose of the study and signed an informed consent document electronically. This study was in compliance with the principles enunciated in the Declaration of Helsinki. Consenting participants completed a survey package using a secure online survey tool available from <https://www.surveymonkey.com>. Also, some of the participants completed the survey packet at the clinics, and some of them completed it at home. The response rate was approximately 20%. The mean age of participants was 45.82 years ($SD = 11.46$). Eighty-two percent of the participants were female and 65% were married. Thirty-three percent of the participants were in the first stage of cancer, 25.5% were in the second stage, and 28.6% were in the third stage of cancer. Higher levels of the cancer stages indicate the cancer has spread. Further information regarding sample and disability-related characteristics of participants are provided in Table 1.

Translation

The HCCQ was translated into the Turkish language by two bilingual researchers (Cahit Kaya and Emre Umucu) independently. As recommended by the World Health Organization (2017), the first researcher translated the instrument from English to Turkish, and the second researcher translated the instrument back to English. Both researchers held consensus meetings to compare discrepancies between the original version and the translated version of the instrument and made necessary changes. In the final steps, both researchers agreed the translated version sufficiently conveyed the meaning of the original version of the instrument.

Measures

Health Care Climate Questionnaire (HCCQ)

The HCCQ was developed to measure the patients' perception of the extent healthcare providers or physicians support

Table 1. Demographic and impairment-related characteristics of participants

Demographic covariates	N (%)	M (SD)
Age		45.82 (11.46)
Gender		
Men	33 (17.2%)	
Women	159 (82.8%)	
Marital status		
Married	124 (64.6%)	
Not married	68 (35.4%)	
Education		
< High school	43 (22.4%)	
High school graduate	41 (21.4%)	
Post-secondary education/ Associate's degree	29 (15.1%)	
Bachelor's degree	52 (27.1%)	
Master's degree or above	27 (14.1%)	
Income level		
Low	99 (51.6%)	
Medium	70 (36.5%)	
High	23 (11.9%)	
Type of cancer		
Breast cancer	100 (52.1%)	
Other	92 (47.9%)	
Cancer stage		
First stage	65 (33.9%)	
Second stage	49 (25.5%)	
Third stage	55 (28.6%)	

patients' autonomy and involve them in decision-making. The HCCQ is a unidimensional scale composed of 15 items (e.g., "I feel that the staff has provided me with choices and options"). Items are rated on a 7-point Likert scale ranging from 1 (= *strongly disagree*) to 7 (= *strongly agree*), and item #13 is a reverse-scored item. A factor-based scale score is computed by averaging all item scores, and higher scores represent a higher level of perceived autonomy support. The internal consistency reliability coefficients (Cronbach's α) for the HCCQ were reported to be .95 (Williams et al., 1996). The Cronbach's α coefficient was computed to be .95 in the present study.

Satisfaction With Life Scale (SWLS)

SWLS is a brief 5-item measure developed by Diener et al. (1985) to assess global cognitive judgments of life satisfaction. Sample items include "I am satisfied with my life" and "In most ways my life is close to my ideal." Items are rated on a 7-point Likert rating scale ranging from 1 (= *strongly disagree*) to 7 (= *strongly agree*). Reliability and validity of the SWLS is supported by research with a range of age groups (Pavot et al., 1991). The Cronbach coefficient for

the SWLS was reported to be .87 (Diener et al., 1985), and the Cronbach's α for this study is .87.

The European Organization for Research and Treatment of Cancer (EORTC) Quality of Life Questionnaire (QLQ-C30)

EORTC QLQ-C30 is a 30-item psychological instrument that assesses the health-related quality of life of patients with cancer (Aaronson et al., 1993). The QLQ-C30 has five functional scales measuring physical, role, cognitive, emotional, and social functioning; three symptom scales measuring fatigue, pain, and nausea and vomiting problems; a global health status scale; and a number of items measuring additional symptoms reported by patients (e.g., sleep problems; Aaronson et al., 1993). The current study used the five functional scales and the three symptom scales. The reported internal consistency reliability coefficients (Cronbach's α) for the QLQ subscales ranged from .56 to .85 for a sample of patients with cancer in Turkey (Cankurtaran et al., 2008). In the present study, Cronbach's α coefficients were found to range from .66 to .90.

Data Analysis

Although previous studies indicated a one-factor measurement structure for the HCCQ in US and German populations (Schmidt et al., 2012; Shumway et al., 2015), there is no study that investigated the measurement structure of the HCCQ in the Turkish population. This is the first study that examined the factorial structure of a Turkish version of HCCQ. As a result, this study used exploratory factor analysis (EFA) using principal axis factoring to investigate the factorial structure of Turkish version of HCCQ using SPSS (version 23). As for rotation, oblique Promax method was applied. Missing values were imputed using regression methods. In addition, scores from the HCCQ were correlated with scores from SWLS, QLQ-30, pain, fatigue, and sleep problems to determine the relationship between these variables. Additionally, mean and standard deviations of the HCCQ were computed to provide an overall description of the sample. SPSS software version of 23 was used to conduct the analyses (IBM Corp., 2016).

After conducting EFA, a confirmatory factor analysis (CFA) using R statistical package was performed. As structural equation modeling researchers suggested, the goodness of fit of the measurement model was evaluated using chi-square goodness of fit test and several others fit indices. Chi-square is a robust test and sensitive to sample size, therefore, the additional fit indices including χ^2/df , Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Bayesian Information Criterion (BIC), and Root Mean Square Error of Approximation (RMSEA) were used. A nonsignificant χ^2 , a relative chi-square (χ^2/df) ranging

from 1 to 3, and CFI and TLI values above .90 indicates an acceptable fit; whereas CFI and TLI values greater than .95 indicate an excellent fit (Aebi et al., 2013; Byrne, 2001, Hu & Bentler, 1995; Weston et al., 2008). The RMSEA values less than 0.05 indicates a close fit, and values between 0.05 and 0.08 indicate a reasonable level of error approximations (Byrne, 2001). In addition to it, BIC helps us to compare models with lower BIC values indicate a better fit.

Results

Factor Analysis

The average score for the HCCQ was 4.71 ($SD = 1.65$), which was lower than the average score of 5.50 ($SD = 1.70$) for cancer patients in Germany and 6.30 for cancer patients in the US (Schmidt et al., 2012; Shumway et al., 2015). EFA used to determine the measurement structure of the HCCQ, the number of underlying constructs measured by the questionnaire. The Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1970), which assesses adequacy of the correlation between the items, was .95 ($> .50$). The Bartlett's test of sphericity (Bartlett, 1950), which assesses whether correlations in the data set were appropriate for factor analysis, was found to be significant $\chi^2(105, N = 186) = 2,699.65, p < .00$, indicating that the correlation matrix is not an identity matrix and appropriate for the factor analysis. The 15×15 correlation matrix of the HCCQ was subjected to principal axis factoring.

The Catell scree test and Kaiser-Guttman's "eigenvalues greater than one" criterion (Kaiser, 1960) were used to determine the number of factors that should be extracted, and item-loadings $> .45$ were used retain items. The results indicated two factors had eigenvalues greater than one. The first factor explained 64% of variance, and the second factor explained 6.84% of the variance. Cattell's scree test (Nunnally & Bernstein, 1994) provided a better understanding of factor structure of HCCQ, and the scree test indicated one-factor structure. Although one-factor structure aligns with the original conceptualization of HCCQ measuring perceived autonomy support, this study found two latent factors with eigenvalues greater than one. An examination of the factor loadings indicated that item #13 ("I don't feel very good about the way my health care practitioner talks to me about my health") did not meet the threshold of .40 or higher and was eliminated from the CFA. Means and standard deviations for each of the items on the HCCQ scale, factor loadings, eigenvalues, and percentage of variance explained, are shown in Table 2.

The first factor comprised of 8 items that were associated with healthcare climate supporting patients' need for competence and relatedness defined in the self-determination

Table 2. Means and standard deviations for each of the items on the HCCQ scale, factor loadings, eigenvalues, and percentage of variance explained by the factor loadings

Description	M (SD)	Factor 1	Factor 2
11. My health care practitioner handles my emotions very well.	4.39 (2.14)	.952	-.089
15. I feel able to share my feelings with my health care practitioner.	4.38 (2.21)	.908	-.046
12. I feel that my health care practitioner cares about me as a person.	5.04 (2.07)	.835	.076
9. My health care practitioner answers my questions related to my health fully and carefully.	4.89 (2.14)	.832	.103
14. My health care practitioner tries to understand how I see my health before suggesting any changes.	4.59 (2.06)	.794	.067
10. My health care practitioner listens to how I would like to do things regarding my health.	4.80 (2.14)	.786	.150
7. My health care practitioner encourages me to ask questions.	4.61 (2.22)	.781	.152
8. I feel a lot of trust in my health care practitioner.	4.92 (2.09)	.698	.227
4. My health care practitioner conveys confidence in my ability to make changes regarding my health.	4.57 (1.95)	-.031	.819
3. I am able to be open with my health care practitioner about my health.	5.26 (2.14)	-.014	.811
1. I feel that my health care practitioner has provided me choices and options about my health.	4.66 (2.01)	.126	.721
2. I feel my health care practitioner understands how I see things with respect to my health.	4.59 (2.06)	.160	.700
5. I feel that my health care practitioner accepts me whether I follow their recommendations or not.	4.63 (2.00)	.036	.579
6. My health care practitioner has made sure I really understand my health risk behaviors and the benefits of changing these behaviors without pressuring me to do so.	5.01 (2.19)	.449	.455
13. I don't feel very good about the way my health care practitioner talks to me about my health.	3.64 (2.20)	-.103	.000
Total score	70.73 (24.80)		
Eigenvalue		9.72	1.02
Cumulative % of variance		64.83	6.84

Note. Factor 1 = Item #13 has factor loadings less than .40 and was eliminated from the confirmatory factor analysis. HCCQ = Health Care Climate Questionnaire.

theory (e.g., item #15 “I feel able to share my feelings with my health care practitioner” and item #10 “My health care practitioner listens to how I would like to do things regarding my health”). Factor 1 is labeled as healthcare climate supporting competence and relatedness. The second factor comprised of 6 items that were related to healthcare climate supporting the autonomy needs of the patients (e.g., item #1 “I feel that my health care practitioner has provided me choices and options about my health” and item #3 “I am able to be open with my health care practitioner about my health”). The label for the second factor is healthcare climate supporting autonomy.

A one-factor model and a two-factor intercorrelated model for the HCCQ were tested using CFA. The CFA results indicated that one-factor model did not show a good fit for the data, $\chi^2 = (90, N = 186) = 321.22$, $\chi^2/df = 3.56$, CFI = .91, TLI = .90, BIC = 9,746.07, and RMSEA = 0.11, 90% CI [0.10, 0.13]. The two-factor model showed a slightly better fit, $\chi^2 = (91, N = 186) = 211.21$, $\chi^2/df = 3.56$, CFI = .95, TLI = .94, BIC = 8,827.57, and RMSEA = 0.09, 90% CI

[0.08, 0.11]. Examination of the modification index suggested that two pairs of error terms (i.e., item #9 and item #10; item #14 and item #15) should be correlated. Correlations of error terms indicate that items that are related to those error terms have more commonalities than other items. After correlating the error terms for these two pairs of items, the results showed a good-fit, $\chi^2 = (74, N = 186) = 157.07$, $\chi^2/df = 2.12$, CFI = .96, TLI = .96, BIC = 8,783.88, and RMSEA = 0.07, 90% CI [0.06, 0.09]. Overall, the results support the two-factor model as the fit indices showed a better fit for the model than the one-factor model.

Correlations

The correlations between the HCCQ and Factor 1 (healthcare climate supporting competence and relatedness) and Factor 2 (healthcare climate supporting autonomy) and SWLS and the QLQ-C30 were examined in order to better understand the relationship between these variables. The results indicated that perceived autonomy support was

Table 3. Correlations between HCCQ and other measures (life satisfaction, physical, role, emotional, social, cognitive functioning, pain, and fatigue)

	Life satisfaction	Physical	Role	Emotional	Social	Cognitive	Pain	Fatigue
HCCQ	.19**	.23**	.19**	.22**	.28**	.15**	-.14*	-.19**
Factor 1	.14*	.19**	.16*	.20**	.24**	.13	-.14	-.19**
Factor 2	.24**	.21**	.19**	.20**	.29**	.15*	-.11	-.15*

Note. HCCQ = Health Care Climate Questionnaire. * $p < .05$, ** $p < .01$.

positively associated with life satisfaction, global health status, and functioning level of cancer patients. In addition, a higher level of perceived autonomy support was significantly associated with a lower level of pain, fatigue, and sleep problems. However, healthcare climate supporting competency and relatedness did not have significant association with cognitive functioning, and both of the factors were not significantly associated with pain. Correlations between HCCQ and SWLS and QLQ-C30 are shown in Table 3. Despite a lack of collaborative communication, shared decision-making, and two-way communication of information between cancer survivors and physicians in Turkey, the results of this study were similar to previous studies. The German study of HCCQ found a significant correlation between perceived autonomy support and patients' satisfaction in family medicine, and the original study of HCCQ found significant correlations between perceived healthcare climate supporting autonomy and autonomy orientation of the patients (Schmidt et al., 2012; Williams et al., 1996).

Discussion

The current study evaluated the psychometric properties of the HCCQ for use in Turkey. The study examined the factorial structure of the scale with cancer patients in Turkey, and the results indicated that the Turkish version of the scale has a two-factor structure. Although, a one-factor structure aligns with the original conceptualization of HCCQ measuring perceived autonomy support, this study found a two-factor structure. Since this is one of the first studies to investigate psychometric properties of a HCCQ, it could be a useful measurement tool to measure support of basic psychological needs (i.e., autonomy, competence, relatedness). The literature shows that cultural factors may play a role in perceived support of basic psychological needs, and there is a clearly a lack of collaboration and two-way communication between cancer survivors and physicians in Turkey (Terzioglu, 2008).

The findings of this study are in line with previous research indicating that support of basic psychological needs is an important aspect of the treatment process, and having quality communication, sharing information

with patients, and involving patients in the decision-making process has a positive effect on treatment outcomes and well-being of patients (Shumway et al., 2015; Schmidt et al., 2012; Ryan et al., 1995). Therefore, support of basic psychological needs proves to be an important concept in relationships of health care professionals and patients. Being involved in the treatment process may increase autonomous motivation of the patients to follow the treatment process, and it also may increase quality of communication between health care professionals and patients. When health care professionals acknowledge patients' emotions and place minimal pressure on patients to behave in certain ways, patients may display improved psychological outcomes (Williams et al., 1998), which may lead to increased quality of life and well-being.

Although Turkey increased the quantity of health care services, the OECD (2014) suggested focusing on enhancing the quality of health care services to improve health care outcomes. Promoting patients' perceived support of basic psychological needs could be one way to improve health care outcomes. Therefore, more systematic changes are needed in the Turkish health care system to encourage health care professionals to provide more support of basic psychological needs to patients. Use of the HCCQ will promote measurement of participants' perceptions of the degree of support of basic psychological needs among the Turkish population, which will help encourage these systematic changes so patients receive more support of basic psychological needs from Turkish health care professionals.

In Turkey, a hierarchical society, physicians are regarded as authority figures, and patients are expected to comply with physician orders without question. Research has indicated that Turkish patients and their family accept that physicians are not required to discuss the treatment process with them (Güven, 2010; Güven & Sert, 2010). In addition, Turkish patients nor their family members are typically not involved in decision-making processes (Terzioglu, 2008). However, in German and US populations, equal relationships between patients and health care professionals are encouraged, and therefore, patients are more likely to be involved in the health care decision-making process. Consequently, it is not surprising that the perceived level of support of basic psychological needs of Turkish patients was lower than both German and US populations. However, it is important to note that despite cultural tendencies

between Turkish, German, and US populations, perceived support of basic psychological needs have a positive effect on physical and mental well-being for all three populations.

Implications for Rehabilitation Professionals

With recent economic and societal changes, Turkey is shifting from a collectivist society to an individualistic society (Kaya et al., 2015); currently, there is an emphasis on patients' rights and incorporating patient views into treatment in healthcare services (OECD, 2014). As support of basic psychological needs is an important factor in the treatment process, systematic changes, such as decreasing the patient to healthcare professional ratio, are needed in the Turkish health care system in order to provide health care professionals more time to acknowledge patients feelings, provide more information regarding the treatment process, and involve them in the decision-making process.

Research shows that Turkish health care professionals receive no formal education regarding important topics including patients' rights, and those who receive education do not use the knowledge effectively (Akca et al., 2015). As a result, education and training sessions for health care providers should be designed to provide more information to patients, improve communication, and involve them in decision-making. In addition, health care professionals should be educated about self-determination theory and the positive effect of perceived support of basic psychological needs on patients' well-being and quality of life. Moreover, the provision of support of basic psychological needs should be included in treatment process, along with other evidence-based practices. Such education and training sessions will not only help Turkish patients, but they will also provide a new approach of treating patients for health care professionals.

In some instances, infrastructure of the Turkish health care system may not be sufficient to incorporate patients into the treatment process; in those cases, based on individual needs, healthcare professionals should look for new ways to begin to inform patients about the treatment process and involve them into decision-making process. For example, healthcare professionals can print information about patients' illnesses and the treatment process and provide patients with a phone number, in case if they have more questions. In addition, health care initiatives can be planned to inform patients and health care professionals about the positive effect of being involved in the treatment and decision-making process. Such initiatives could include, but are not limited to, setting up information desks in hospitals to provide information regarding patients' rights, encouraging patients to be involved in decision-making and treatment processes, encouraging and rewarding

health care professionals for working closely with patients, and monitoring health care facilitates more closely to make sure quality health care services are provided.

Limitations

This study has several limitations that need to be considered when interpreting the results. First, the study is one of the first to investigate the psychometric properties of HCCQ in Turkey; and more research is needed to confirm the results. This study also used a convenience sample of cancer patients, and future research may show differences for different clinical populations. In addition, this study only investigated the relationship between perceived autonomy support and quality of life and well-being of cancer patients. However, it is possible that there are other mediating factors (e.g., treatment adherence) between perceived autonomy support and well-being of cancer patients, and as a result, more research is needed to investigate possible mediators.

Conclusion

This study is the first that investigated the psychometric properties of the HCCQ with a group of Turkish cancer patients. The results indicated that the HCCQ is a valid measure of perceived support of basic psychological needs with a two-factor structure. Perceived level of support of basic psychological needs was relatively low among Turkish cancer patients in comparison to German and US populations. The results also indicated that support of basic psychological needs was significantly positively associated with well-being and quality of life of cancer patients. Cancer patients who had higher levels of perceived support of basic psychological needs had lower levels of cancer related symptoms. Although perceived level of support of basic psychological needs was significantly associated with positive outcomes for Turkish cancer patients, the infrastructure of Turkish health care system may not be sufficient to involve patients in treatment decision-making, and it is suggested that the Turkish health care system should aim to increase quality of care.

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Appendix

Turkish Translation of the HCCQ

Sağlık Hizmetleri Ortamı Anketi

Lütfen hastalığınız ile ilgili olarak sizin sağlık çalışanlarımızla olan ilişkiniz konusundaki aşağıdaki sorulara cevap veriniz. Sağlık çalışanlarının hastalarla çeşitli şekillerde ilgilenme tarzları vardır. Cevaplarınız gizli tutulacaktır ve hiç bir sağlık çalışanı cevaplarınızı bilemeyecektir. Lütfen soruları cevaplarırken dürüst ve açık olunuz. 1' den 7' ye kadar verilen numaraları işaretleyerek sizin için en doğru olan seçeneği belirtiniz.

Kesinlikle katılmıyorum (1), Bazen katılmıyorum (2), Biraz katılmıyorum (3), Nötr ne katılıyorum ne katılmıyorum (4), Biraz katılıyorum (5), Bazen katılıyorum (6), Kesinlikle katılıyorum (7)

1.	Sağlık çalışanlarının bana sağlığımla ilgili tercihler ve seçenekler sunuyor olduklarını hissedirim.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2.	Sağlık çalışanları, kendi sağlığımla ilgili konularda nasıl bir tavır takındığını anlarlar.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
3.	Sağlık çalışanlarına sağlığım konusunda açık olabilmekteyim.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
4.	Sağlık çalışanları kendi sağlığımla ilgili konularda değişiklik yapabilme kabiliyetime güvenirlir.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
5.	Sağlık çalışanları onların önerilerine uysam da uymasam da beni kabul ederler.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
6.	Sağlık çalışanları, sağlığıma riske atan davranışlarımı ve bu davranışları değiştirmenin bana getireceği faydaları onları yapma konusunda bana baskı yapmadan, gerçekten anlamamda bana yardımcı oluyorlar emin oluyorlar.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
7.	Sağlık çalışanları beni soru sormam konusunda cesaretlendirirler.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
8.	Sağlık çalışanlarına oldukça güvendiğimi hissedirim.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
9.	Sağlık çalışanları sağlığımla ilgili sorularımı dikkatlice ve tam olarak cevaplarlar.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
10.	Sağlık çalışanları sağlığımla ilgili şeyleri nasıl yapmak istediğimi dinlerler.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
11.	Sağlık çalışanları duygularımı çok iyi ele alırlar.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
12.	Sağlık çalışanları bana bir insan gibi dikkat ederler.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
13.	Sağlık çalışanlarının sağlığımla ilgili benimle konuşma tarzları konusunda çok iyi hissetmiyorum.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
14.	Sağlık çalışanları herhangi bir değişiklik önermeden önce, benim sağlığıma nasıl gördüğümü anlamaya çalışırlar.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
15.	Sağlık çalışanlarıyla duygularımı paylaşabileceğimi hissedirim.	(1)	(2)	(3)	(4)	(5)	(6)	(7)