

Coping, Positive Growth and Social Support in Turkish Women with Breast Cancer

Türk Kadınlarında Meme Kanseri ile Başa Çıkma, Pozitif Büyüme ve Sosyal Destek

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Abstract: The study aimed to explore the role of social support, coping strategies in fostering positive growth among Turkish women with breast cancer, utilizing a cross-sectional design. Involving 188 women from three hospital centers in Türkiye, the research employed standardized measures such as The Ways of Coping Inventory and the Stress Related Growth Scale, alongside collecting socio-demographic and medical information. The results revealed significant positive correlations between social support, problem-solving, religious coping, and seeking social support coping strategies with positive growth ($p < 0.05$). Conversely, helplessness coping strategies were inversely correlated with positive growth ($p < 0.05$). Furthermore, multivariate analysis indicated that 61.2% of the positive growth score could be attributed to variables such as the stage of cancer, marital status, social support, problem-solving coping, and religious coping. The perceived availability of emotional support, particularly in the context of benefit finding, plays a crucial role in the patients' emotional adjustment. Conclusively, the findings suggest that enhancing social support, problem-solving, and religious coping could significantly improve the outcomes for Turkish women dealing with breast cancer. This research underscores the need for improvements in healthcare policies, support systems, and educational programs, proposing that such interventions should be integrated into healthcare services to effectively contribute to the positive growth of breast cancer patients.

Keywords: Positive Growth, Coping, Social Support, Breast Cancer, Women

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Öz: Bu çalışma, Türkiye de meme kanseri tanısı almış kadınlar arasında sosyal destek ve başa çıkma stratejilerinin pozitif büyümeyi teşvik etmedeki rolünü keşfetmeyi amaçlamaktadır ve kesitsel bir tasarımla gerçekleştirilmiştir. Türkiye'deki üç hastane merkezinden 188 kadın katılım sağlamış, araştırmada Başa Çıkma Stratejileri Envanteri ve Stresle İlgili Büyüme Ölçeği kullanılmıştır; ayrıca sosyo-demografik ve tıbbi bilgiler de toplanmıştır. Sonuçlar, sosyal destek, problem çözme, dini başa çıkma ve sosyal destek arama stratejilerinin pozitif büyüme ile önemli pozitif korelasyonlar gösterdiğini ortaya koymuştur ($p < 0.05$). Tersine, çaresizlik başa çıkma stratejileri pozitif büyüme ile ters korelasyon göstermiştir ($p < 0.05$). Ayrıca, çok değişkenli analiz, pozitif büyüme puanının %61.2'sinin kanserin evresi, medeni durum, sosyal destek, problem çözme ve dini başa çıkma gibi değişkenlere atfedilebileceğini göstermiştir. Bu araştırma, sağlık politikalarında, destek sistemlerinde ve eğitim programlarında iyileştirmelerin gerekliliğini vurgulamakta ve bu tür müdahalelerin meme kanseri hastalarının pozitif büyümesine etkili bir şekilde katkıda bulunmak için sağlık hizmetlerine entegre edilmesi önem taşımaktadır.

Anahtar Kelimeler: Pozitif Büyüme, Başa Çıkma, Sosyal Destek, Meme Kanseri, Kadınlar

1. Introduction

Breast cancer patients experience a variety of stressors including the life-threatening diagnosis itself, and stressful medical procedures and treatment related side effects (Andrykowski et al., 1998). Besides the physical challenges, breast cancer patients experience a variety of psychological threats and lose such as reduced functioning and role performance, uncertainty about the future, body image issues (Carver and Antoni, 2004). Although the cancer experience is distressing and disruptive, a growing body of evidence suggest many breast cancer survivors, like many survivors of other cancers and life-threatening diseases; report positive contributions following their cancer experience (Antoni & Carver, 2003; Bellizi, 2004; Bellizi & Blank, 2006; Cardova, et al., 2001; McGregor et al. 2004; Petrie et al., 1999; Sears et al., 2003; Tomich & Helgeson, 2002).

Though it seems paradoxical, some patients express that having been diagnosed with cancer has been a positive experience in their lives overall (Carver & Antoni, 2004; Urcuyo et al., 2005). Breast cancer survivors report positive changes in their relationship with others, improved personal resources, appreciation for life, and their purpose or priorities in life, greater spirituality (Bellizi & Blank 2006; Carver & Antoni 2004, Andrykowski et al., 1993; Cardova et al, 200; Dow et al., 1996; Ferrel et al., 1995; Stanton et al., 2002). These findings are consistent with the literature in other fields indicating that traumatic events can yield positive outcomes (Carver & Antoni, 2004; Affleck & Tennen, 1996; Mcfarland & Alvora, 2000; McMillen, Mohr et al., 1999; Park, Tedeschi & Calhoun, 1996).

Several psychological variables have been found to be associated with emotional adjustment and positive outcomes in breast cancer (Kornblith et al. 2001; Luszczynska et al., 2005; Deshields et al., 2006; Segrin et al., 2005; Filazoglu & Griva 2008). A social factor that may predict perceived positives outcomes is the perceived availability of emotional support (Sears et al., 2003) social support in general has evidence positive relations with benefit finding or correlational studies of women with multiple sclerosis (Mohr et al., 1999) and individual experiencing a variety of stressful events (Park, Cohen & Murch, 1996).

There is also broad theoretical and empirical support for including coping in models of psychological growth (Bellizi & Blank 2006; Sears et al., 2003; Boyers, 2001; Ho et al., 2004; Carver et al., 1993; Friedman et al., 1988; Janoff-Bulman, 1992; Stanton & Snider, 1993; Tedeschi & Calhoun, Boyers (2001), found that breast cancer survivors who had higher level of active coping, positive reframing, planning, and use of friends as social support seeking coping for emotional support had significantly higher levels of positive growth than women who had lower levels of these coping strategies. On the other hand, some studies do not confirm these findings. Denial has been related to lower mood disturbance and emotional distress. The use of adaptive styles of coping as an attempt to change difficult circumstances for the better seems to be important for positive growth (Bellizi & Blank 2006).

Some researchers have shown that certain characteristics of breast cancer patients are related to the level of positive growth they experience. The variables that are found to be associated with the level of positive growth in breast cancer patients are age (Antoni et al., 2001), SES (Cordova et al. 2001, Tomich and Helgeson, 2004) education

(Urcuyo et al., 2005; Sears et al, 2003) and marital status (Kornblith et al., 2001), clinical stage of illness (Bellizi & Blank 2006; Urcuyo et al., 2005; Tomich & Helgeson 2004; Lechner et al., 2003; Templin, & Mood, 2002).

One reason for the growth of interest in psychological growth is the belief that those who initially find benefit in adversity are better off emotionally later on (Urcuyo et al., 2005). There is evidence supporting this position from studies of persons who had experienced strokes (Thompson, 1991), heart attacks (Affleck, Tennen, Croog & Levine, 1987), sexual assault (Fraizer et al., 2001). There is also some evidence consistent with this position within cancer literature (Carver & Antoni, 2004; Urcuya et al., 2005; Bellizi and Blank, 2006) but there is contradictory evidence as well. Specifically, Tomich and Helgeson (2004) found that initial benefit finding predicted distress 9 months later among breast cancer patients. Thus, this question remains under intensive investigation.

The majority of past research was conducted in either North America or North European countries, which has implication on conclusions drawn on a wider, international level. Even though in the area of evidence-based health care it is increasingly the case that findings in one country are used to support health care practice in other countries, it is possible that differences in cultural regulations, societal conditions/structures or differences in health care systems, settings and practices make it difficult to generalise the reported study findings to other (non-western) countries and populations. Examining a more comprehensive model of psychological growth in breast cancer survivors in different cultures may help further an understanding of the growth phenomenon. Little is known about the psychosocial and positive growth impact of breast cancer and the effect of coping and social support on positive growth outcomes among Turkish women.

With these issues in mind the purpose of this study was to explore the positive growth outcome in sample of Turkish breast cancer patients. The aims of the present study were two fold:

- To document positive growth in women who undergo treatment for breast cancer in Trkiye.
- To identify predictors of positive growth outcomes among socio-demographic medical and psychological variables. Emphasis was placed on examining the role coping and social support in explaining positive growth in this patient population.

In conclusion, the study "Exploring Social Support, Positive Growth, and Coping in Turkish Women with Breast Cancer" makes a significant contribution to the understanding of how psychological, social, and cultural factors intersect in the context of coping with breast cancer.

2.Method

2.1.Sample

The study was conducted with hospitals that participated from different parts of Trkiye to ensure geographical representation.

This research was ethically approved by the Okan University Ethics Committee with the decision number 128 on December 11, 2019. Following ethical approval women attending the participating breast cancer outpatients'

clinics to receive post operative treatment (n=226) were invited to participate. Eligibility criteria included: (a) age over 18 years, (b) first time diagnosis of breast cancer (relapse patients were excluded), (c) to have been diagnosed with breast cancer and to have undergone breast surgery (total or partial mastectomy) for a minimum of 3 months before study. The three-month interval was selected to ensure some distance from potential early pronounced emotional reactions to diagnosis and surgery and to allow some time for adjustment and recovery post operatively, (d) not being concurrently hospitalised, (e) not being diagnosed with or being currently treated for psychiatric conditions, and (f) fluency in written and spoken Turkish.

2.2.Procedure

Eligible participants were identified by nurse/doctor and approached for participants by researcher who explained the aims and procedures of the study.

The researcher was available to answer any queries or to read out questionnaire for patients if they so required or asked for. All assessments took place immediately after the patients' routine check up by their consultant oncologist.

2.3.Measures

Demographic and Medical History Information form

Demographic information including age, ethnicity, education, marital and employment status, perceived work ability, household income and residence area was collected by questionnaire developed for the purposes of the study. Medical data were also collected by reviewing patients' medical records. Information related to patients' operation type, treatment type and stage of the illness, duration of illness and time since diagnosis and operation was recorded and verified by patients' doctor

The multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1998)

This 12-item scale comprises three subscales measuring perceived social support from three different sources (significant other, family and friends). MSPSS has been translated and adapted into Turkish by Eker and Arkar (1995). In their study Eker and Arkar have shown that the Turkish version of MSPSS has good psychometric properties (Cronbach Alphas ranging between .85 and .91).

The ways of coping inventory:

WCI was developed and later revised by Folkman and Lazarus (1985). It assesses the thoughts and behaviours that the person uses to manage the problem and regulate the emotional response to the problem. The WCI has been translated into Turkish by Siva (Ucman, 1990) and further revised and psychometrically validated by Gunes (2001). For the purposes of this study the revised, shorter version developed by Gunes (2001) was used. This contains 42 items that form 4 subscales: helplessness coping, problem solving coping, religious coping, optimistic coping.

The Stress Related Growth Scale:

SRGS was developed by Park et al., (1996) to assess stress-related growth. In development of the SRGS, Park et al., (1996) predicted a three-factor solution corresponding to personal, social and coping resources growth. SRGS designed to measure the extent of positive personal outcomes that result from experiencing negative life events/ this instrument has shown good reliability and validity (Park, et al.,1996)

Gunes (2001) translated SRGS into Turkish. Gunes used this scale to assess the extent to which earthquake survivors perceived benefits. The cronbach Alpha reliability of the whole scale was found to be .94 in Gunes's study.

2.4.Statistical analysis

The statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS, Inc., 1998) Version 14.0. The association between predictor variables, namely socio-demographic, clinical variables, coping and social support were examined using correlations or ANOVA comparison for continuous or categorical variables respectively.

Predictors of positive growth were identified with univariate analyses (ANOVA, Pearson R correlations or where appropriate their non-parametric equivalents) and hierarchical multiple regressions. All significant variables (set at $p < .05$) identified from univariate analyses were included in the hierarchical multiple regressions using enter method and a level of $p < .05$ as an entry criterion. Regressions were performed for positive growth. Predictors entered the regression equations in a specified order: (a) socio-demographic (b) clinical and (c) psychological variables.

3.Findings

Two hundred and twenty-six (n = 226) women identified by participating nurses were approached by principal researcher to participate. Twenty-four (n = 24) women had to be excluded as they were relapse breast cancer cases. Out of the remaining two hundred and two (n=202) women contacted, one hundred and eighty-eight women (n=188) consented to the protocol (response rate = 83.6%). Socio-demographic and clinical characteristics of the study sample are presented in Table 1.

Table 1: Socio-demographic and clinical characteristics of the sample

Variables	Mean (Sd)	Range	% (N)
Age (years)	45.12 (5.6)	33 – 62	
Partner’s Age (years)	46.2 (24.6)	37 – 69	
Time since diagnosis (months)	7.6 (3)	3 – 18	
Time since operation (months)	6.09 (2.51)	3-14	
Marital Status			
Married			66.0 % (124)
Single			19.7% (37)
Widowed			5.9 % (11)
Divorced			7.4 % (14)
Employment Status			

Employed	62.2 % (117)
Unemployed	35.1 % (66)
Retired	2.7 % (5)
Education level	
Primary school	13.8% (26)
High school	28.8% (54)
University degree	45.2% (85)
Postgraduate	12.2% (23)
Religion	
Muslim	89.9 % (169)
Others	10.1 % (19)
Stage of Illness*	
Stage 1	23.4% (44)
Stage 2	55.9 % (105)
Stage3	18.6% (35)
Stage4	2.1% (4)
Treatment Type after Diagnosis*	
Chemotherapy	17.6% (33)
Radiotherapy	38.8% (73)
Chemotherapy+ Radiotherapy	14.4% (27)
No treatment	29.3% (55)
Operation Type**	
Radical Mastectomy	11.2% (21)
Modified Radical Mastectomy	66.5% (125)
Partial Mastectomy	11.7% (22)
Lumpectomy	10.6% (20)
Treatment Type after Operation	
Chemotherapy	72.9% (137)
Radiotherapy	9% (17)
Chemotherapy+ Radiotherapy	11.7% (22)
No treatment	6.4% (12)

*Stage of the Illness: Stage 1: The earliest, most curable stage; Stage 2: Some spreading of cancer to the surrounding tissues; Stage 3: Involves metastasis to distant lymph nodes; Stage 4: The most advanced stages of breast cancer that has spread to distant organs.

** Operation Type: Modified Radical Mastectomy: Removal of the entire breast. This is the most common form of mastectomy performed today. Radical Mastectomy: Removal of the entire breast, all underarm lymph nodes and major and minor muscles under breast. This strategy is rarely performed today. Partial Mastectomy: Removal of a portion of the breast tissue. Lumpectomy: Removal of the breast cancer tumour (1).

Means, Sds and Cronbach's coefficient alphas for study variables are depicted in Table 2.

Table 2: Descriptive Statistic for Dependent and Predictor Variables

Variable	n	M	Sd	*α
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MSPSS	188	58.20	12	.98
WCI				
HC	188	17.18	3.66	.81
PC	188	19.88	4.61	.66
OC	188	19.48	4.07	.81
RC	188	29.66	5.94	.87
PG	188	113.68	13.07	.94

Note. MSPSS = The multidimensional Scale of Perceived Social Support; WCI = The ways of coping inventory RC = Religious coping; OC = Optimistic coping; PC = Problem solving coping; HC = Helplessness Coping; PG: Positive

3.1. Association between socio-demographic, clinical and psychological variables

Univariate analysis using correlations and ANOVA showed that age (m=45.5(SD=5.70; Range 33-62), employment status, and education, having children marital status, time since diagnosis, stage of cancer and time since operation. were significantly associated with coping and social support.

3.2. Associations between socio-demographic, clinical and psychological variables

Univariate analyses using correlations and ANOVA showed that age, employment status, having children, marital status, time since diagnosis, stage of cancer and time since operation were significantly associated with coping and social support. ANOVA indicated that women in marital or cohabiting relationship ($F(1, 187) = 1.62; p < .001$), women with children ($F(2, 186) = 1.37, p < .05$), and those who were employed ($F(2, 187) = 2.14 p < .05$) perceived greater levels of social support vs. single, childless or non employed women.

Significant group differences were also noted in coping. Problem solving and optimistic coping strategies were more frequently reported and used among women in cohabiting relationship ($F(2, 187) = 26.34; p > .001$; $F(2, 187) = 18.26; p > .001$ respectively), women with children ($F(2, 187) = 13.24 p > .05$, $F(2, 187) = 9.12; p > .001$ respectively) and women who were employed ($F(2, 187) = 1.08; p > .05$; $F(2, 187) = 2.27; p > .05$ respectively). ANOVA coping and social support means and Sds are depicted in Table 3.

Table 3: Means and Standard deviations for socio-demographic clinical and psychological variables.

	Religious coping	Optimistic coping	Problem solving Coping	Helplessness coping	Social Support
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)
Relationship status					
Married or cohabiting(N=114)	2.26(.36)	2.30(.39)	2.34(.50)	2.29(.41)	5.47(1.32)
Single (N=74)	1.87(.40)	1.93(.44)	1.98(.43)	1.90(.42)	3.80(1.81)
Employment status					
Employed (N=116)	2.05(.44)	2.04(.47)	2.15(.64)	2.08(.49)	4.44(1.83)
Unemployed (N=72)	2.16(.40)	2.23(.42)	2.24(.40)	2.18(.43)	5.10(1.67)

Children status					
Having children (N=128)	1.97(.42)	2.10(.44)	2.04(.42)	2.01(.47)	3.34(1.87)
Not having children (N=60)	2.17(.41)	2.22(.46)	2.28(.579)	2.21(.46)	2.65(1.74)
Post operative treatment					
Chemotherapy (N=137)	1.11(.43)	1.23(.82)	1.67(.89)	1.74(.67)	2.11(1.23)
Radiotherapy (N=17)	2.16(.57)	1.87(.44)	2.17(.42)	1.56(.49)	0.98(1.82)
Combined (N=22)	1.98(.43)	1.23(.47)	1.93(.40)	1.24(.72)	2.34 (1.67)
Stage of breast cancer					
Stage I (N=44)	2.27 (.73)	2.67(.98)	2.34(1.12)	2.17(1.73)	2.76(1.39)
Stage 2 (N=105)	3.71(.67)	2.23(1.14)	2.67(.92)	2.85(.50)	1.89(1.56)
Stage 3 (N=35)	1.56(.33)	1.77 (.42)	1.48(.66)	1.44(.89)	2.39(1.09)
Stage 4 (N=4)	.90(.56)	.78(1.07)	.93(1.01)	1.14(.63)	2.29(1.87)

Among clinical variables, stage of cancer was significantly associated with coping strategies. Post hoc comparisons (using Tukey HND) indicated that women diagnosed with third and fourth stage of breast cancer reported using more religious coping strategies ($F(4, 187) = 2.36; p < .001$) and less problem solving coping compared to women with early stages of breast cancer ($F(4, 187) = 2.61, p < .001$). Factors associated with positive growth:

- (a) Univariate analyses Univariate analyses showed several significant associations between positive growth and socio-demographic, clinical and psychological variables (Table 3). ANOVA indicated that positive growth was associated with employment status ($F(2, 186) = 2.23, p < .05$), marital status ($F(2, 187) = 2.98, p < .05$), and having children ($F(2, 186) = 2.98, p < .05$). Women who were married and those with children and currently employed reported had more positive growth with their experience of breast cancer.

Post-Operative treatment was also associated with positive growth. ANOVA comparisons (followed by post hoc Tukey Honest Difference test) indicated that women treated with a combination of chemotherapy and radiotherapy had significantly higher positive growth than women who had only chemotherapy or radiotherapy as post operational treatment; ($F(2, 187) = 3.17, p < .05$),

Stage of cancer was also associated with positive growth. ANOVA (followed by post hoc Tukey Honest Difference test) comparison between patients showed that compared to early stage (stage 1 and stage 2), patients in advance stage (stage 3 and stage 4) had higher positive growth stage 3 ($F(2, 187) = 11.024, p < .0001$).

3.3. Positive growth

A total SRGS score was obtained by summing up responses to the items of SRGS (M total: 113.68 SD: 21.13; min: 50 and maximum possible score, which can be obtained from this scale, is 150. thus, a mean score of 113.68 showed that this sample have relatively high levels of positive growth. Cronbach alpha reliability of the whole scale was found to be .94 (see table 2).

Correlation analysis showed that problem solving coping, optimistic/seeking social support coping, religious coping, social support were positively associated with positive growth (ps < 0.05) whereas inverse correlations were found for helplessness coping (ps < 0.05).

Table 4: Pearson correlations between positive growth, socio-demographic, clinical and psychological variables

	1	2	3	4	5	6	7	8
1.Age								
2.TSD	-.027							
3.TSO	-.006	.905**						
4.RC	-.241**	.241**	.208**					
5.OC	-.299**	.207*	.176*	.747**				
6.PC	-.281**	.178**	.153*	.666**	.711*			
7.HC	-.257**	.184**	.160*	.811**	-.716**	-.696*		
8.SS	-.355*	.196**	.143*	.728**	.763**	.655**	.719**	
9.PG	.383*	.448*	.440*	.351**	.387*	.325*	.360**	.455**

**Correlation is significant at the 0.01 level (2 tailed)

* Correlation is significant at the 0.05 level (2 tailed)

RC: Religious coping; OC: Optimistic coping; PC: Problem solving coping; HC: Helplessness Coping; SS: Social support; TSD: Time since diagnosis; TSO: Time since operation; PG: Positive growth

Positive growth were significantly associated with socio-demographic and medical variables such as age, employment, being in relationship, having children, stage of breast cancer, time since diagnosis, time since operation. (See table 4).

3.5 Multiple Regressions

To examine which variables accounted for the variance in HRQoL, hierarchical multiple regression analyses using the enter method were conducted for positive growth. The regression models to predict positive growth accounted for moderate amount of variance (see table 5).

The final regression model to predict positive growth accounted $\Delta R^2=61.9\%$ ($\Delta \text{adj. } R^2=60.5\%$) for social support, religious coping and problem solving coping as significant predictors. Psychological variables made the strongest contribution to overall prediction, $\Delta R^2=61.9\%$ ($\Delta \text{adj. } R^2=.605$) on explaining of positive growth. On the other hand clinical variables were not found as significant predictors of positive growth, and from socio-demographic variables only marital status ($\beta=.153, p=.017$) and age accounted as significant predictor of positive growth.

Table 5: Hierarchical Regression Coefficients for Positive Growth

	Positive Growth		
	β	R ²	Adj. R ²
Block 1		.253	.241
Age (37-69)	-.087(p=.083)		
Marital status	.153*(p=.017)		
Employment status	.092(p=.103)		
Having children	-.001(p=.979)		
Block 2		.335	.315
Time since diagnosis	.032 (p=.769)		
Stage of cancer	.032 (p=.580)		
Time since operation	-.063 (p=.571)		
Block 3		.619	.605
Religious coping	.108(p=.023)		
Optseekinsocialsupport	.166(p=.180)		
Problem solving	.277***(p=.000)		
Helplessness cop	.054 (p=.552)		
Social Support	.204* (p=006)		

*p<.05, **p<.01, ***p<.001

4. Discussion

The results of the study are consistent with the study by Mols, et al. (2009) that women with breast cancer showed significantly higher positive growth ($m=113.68$). Several explanations could be brought forward to account for the high level of positive growth impairments in this study sample. Firstly, it may relate to sample characteristics. The

recruited sample consisted of fairly young women (mean age = 45.12, Sd = 5.6) compared to previous studies (Bellizi, 2004; Tomich & Helgeson 2002; Bellizi & Blank 2006). The present study found that younger reported the highest levels of stress related growth. These findings are consistent with previous research (Bellizi, 2004; Tomich & Helgeson 2002; Bellizi & Blank, 2006). Older breast cancer survivors may be dealing with more comorbidities or other significant life events compared with younger survivors. This speculation is supported by previous studies (Bellizi, 2004; Bellizi & Blank, 2006) that found some older breast cancer survivors are not affected by their diagnosis because they are dealing with other problems, such as the loss of loved ones, hearing and vision problems and other significant life events.

Furthermore eighty-nine per cent (89%; $n = 169$) of study participants were Muslim. The religion of Islam would make women more resilient to adversity, because in the Muslim religion people accept whatever they experience in their life as destiny and god's will and this belief brings about more acceptance of challenging and adverse situations such as disease (Taleghani et al., 2006). Religious affiliation has been shown to be associated with positive growth (Manning & Walsh, 2005; Pandey et al., 2005). Several studies have similarly shown that religious coping is positively associated with positive growth outcomes in various patient groups including cancer patients. (Hebert et al., 2009; Sears et al., 2003; Fraizer et al., 2004; Park et al., 1996; Urcuyo et al., 2005; Tarakeshwar et al., 2006). The observed univariate associations between religious coping and positive growth observed in the present study are in line with these earlier findings.

The second aim of the study was to identify determinants of positive growth. This study examined multi-factorial models of positive growth that included socio-demographic, clinical, and psychological variables. Regression analyses showed that these combined variables were moderately successful in explaining variance in positive growth.

The pattern of results also provides strong support for predictive or explanatory power of psychological variables. Problems solving coping and social support consistently emerged as significant multivariate predictors of positive growth independently adding to the variance explained by psychological, demographic and clinical variables in the regression models.

In current study, problem solving coping and social support were main predictors for positive growth. According to those women that using problem solving coping and receiving social support had more positive growth and better emotional well being. These results are consistent with the results collected from the studies by David et al., (2006), Deshields et al. (2006), Du et al., (2022) regarding breast cancer, Hipkins et al., (2004) regarding ovarian cancer as well as Stone et al., (1999) concerning prostate cancer patients. As mentioned earlier, the present sample perceived relatively higher levels of social support as compared to university student sample, lung cancer patients, renal disease patients, normal control group, patients of psychiatry department and emergency surgery patients (Eker & Arkar, 1995) in Trkiye. Thus, it can be argued that the relatively high perceived social support of the breast cancer patients can be favourable situation for their adjustment to their illness. From the engagement type strategies, only the problem solving coping was found to be a significant predictor for all of the outcomes.

In a broader theoretical sense, these findings are consistent with Moos and Schaefer's (1986, 1963) coping theory. These researchers contended that people who react to stressors with engagement coping strategies fare better than those who rely on avoidance coping. These findings suggest that not only do women fare better but they are more likely to grow beyond previous levels of functioning in their relationships, in purpose in life, and appreciation for life. Engagement coping was related to positive growth, using more problem solving coping increased the level of positive growth. However disengagement coping like religious coping was also related to positive growth. Positive growth related to the tendency to engage in positive reframing of the stressful experience as a problem solving coping, and the tendency to use religious coping. Study finding consisted with past findings positive growth has again been related to religious coping and problem solving coping (Park et al. 1998; Park, Edmondson & Blank, 2009; Fraizer et al., 2004; Sears et al., 2003; Urcuyo et al., 2005). The repeated association with religious coping across studies suggests that at least part of the positive growth experience builds on religious resources (Park, 1998). Similarly Khodaveirdyzadeh et al. (2016) found that cancer patients had a high level of spiritual coping. Also, positive religious coping strategies were used more frequently than negative approaches.

The findings in demographic variables related to marital status are generally consistent with Updegraff and Taylor's (2000) theoretical assertion that marital status should be related to psychological growth. Being married or in committed relationship appears to be an important factor in women's perceptions of psychological growth. It is conceivable that the support of women's partners offer a beneficial social support system to help cope with or enhance their situation. This finding is consistent with Boyers (2001), Bellizi and Blank (2006) and Acquati (2016) studies that found breast cancer survivors who seek emotional support from their friends or partners report higher level of positive growth than women who do not. Related to this explanation current study found strong association between positive growth and social support that. High level of social support increased the positive growth among women diagnosed with breast cancer (Carver & Antoni, 2004).

Mols et al. (2009), Urcuyo et al. (2006), Tomich and Helgeson (2004), Lechner et al. (2003) found relation between reporting benefits and higher diseased stage. Women diagnosed with more severe disease perceived more benefits following their diagnosis than did women diagnosed with less severe disease. Present study finding is consistent with a growing body of research that suggests individuals who experience more traumatic life events report more benefits than do those who experience less trauma (Cardova et al. 2001; Park et al., 1996; Tedeschi & Calhoun, 1996; Urcuyo et al., 2005). Tedeschi and Calhoun (1996) contended that individuals who experience more traumatic life events may report more benefits because traumatic events trigger rumination about intense experiences. In current study, women diagnosed with more severe disease may have found more benefits in their experience because they more critically examined their situation compared with those diagnosed with less severe disease. Individuals may deny the implications of impending danger or harm to protect them from painful or frightening information. Denial, however cannot completely account for the current findings because the women who have severe disease and report positive growth are also reporting high level of depression. Tomich and Helgeson (2004) indicating that denial cannot completely account for the benefit findings among women who diagnosed with more severe disease. In recent years, the understanding of denial as a coping mechanism in breast

cancer patients has significantly evolved. Contemporary research, such as the studies by Smith & Dalen (2018) and Jones et al. (2019), suggests that denial serves as a form of emotional regulation and offers a short-term protective role, allowing patients to gradually process their diagnosis. This perspective is further enriched by findings from Greene et al. (2020) and Ng et al. (2018), which highlight the coexistence of contrasting emotions in breast cancer patients. These studies reveal that patients can experience a mix of positive growth and depression, indicating a complex interplay between different coping mechanisms, including denial. The impact of denial on treatment engagement and psychosocial outcomes has also been a focus of recent research. Fernandez et al. (2021) and Patel et al. (2019) emphasize that while initial denial can delay treatment engagement, many patients overcome this barrier with proper support and counseling, and tailored psychological interventions can effectively guide patients from denial to acceptance. The evolving understanding of denial, as discussed by Wang et al. (2020) and Kleinman & Liu (2021), views it as a dynamic process within the broader coping spectrum, rather than a static state. Modern healthcare approaches now stress the importance of recognizing and integrating denial in patient care strategies, acknowledging its role in the complex coping process of breast cancer patients. This nuanced understanding underscores the need for a supportive and patient-centered approach in addressing the psychological experiences of cancer patients.

On the other hand there were not found any significant relationships between education level of women and stress related growth or emotional well being in this sample. These results were consistent with Lechner et al (2003) study that no association were found between benefit findings and education level. In literature however, some studies found association between benefit finding and education level (Tomich and Helgeson, 2004; Bellizi and Blank, 2006). According to Tomich & Helgeson (2004) breast cancer patients who do not have high level education most likely perceived high level of positive growth, less emotional distress.

Although having children might buffer against stress (Updegraff & Tylor, 2000), this study did not find that having children predicted stress related growth. Although social support might be important factors, as a speculated with marital and employment status, having children might not play the same role. It maybe that although the presence of children may be beneficial in buffering against stress, their presence may also complicate women's focus on their own processes of reorientation and redirection (Bellizi & Blank, 2006).

Breast cancer, while being a significant physical and psychological challenge, also presents opportunities for positive psychological changes or growth. Studies have shown that women with breast cancer often report increased resilience, a greater appreciation for life, and improved interpersonal relationships following their diagnosis and treatment (Ma et al., 2022; Aflakseir et al., 2018). This phenomenon, often referred to as post-traumatic growth, highlights the capacity of individuals to find positive meaning and personal growth in the face of adversity.

The study's observations regarding the influence of marital status, employment, and having children offer an interesting dimension. These factors might reflect the socio-cultural context of Trkiye, where family and social roles play a crucial role in identity and social functioning. This is in line with the research by Omialowska et al.,(2021), which emphasizes the psychosocial impact of social roles and responsibilities on health outcomes.

Effective coping strategies play a crucial role in facilitating positive growth. Active coping mechanisms, such as problem-solving and seeking information, have been associated with better psychological outcomes in breast cancer patients (Ma et al., 2022). In contrast, passive coping strategies like avoidance or denial tend to correlate with poorer psychological well-being (Brown & Van der Linden, 2023). The significance of problem-solving and religious coping strategies in predicting positive growth echoes the findings of Ośmiałowska et al.,(2021) and Boatemaa et al. (2020), which suggest that active coping mechanisms, including spiritual and religious practices, contribute to a sense of control and meaning-making in stressful situations. The negative association with helplessness coping aligns with Lazarus and Folkman's stress and coping theory, highlighting that passive coping strategies might exacerbate distress and impede psychological growth.

Social support emerges as a pivotal factor in this process. The current study aligns with the work of Liu et al. (2021), indicating that social support from family, friends, and healthcare professionals significantly contributes to better coping and positive growth. Emotional support, informational support, and tangible support have distinct roles in aiding patients through their treatment journey. For instance, emotional support can buffer the impact of stress and anxiety, while informational support can empower patients to make informed decisions about their treatment (Wan et al. 2022). Consistent with studies (Ma et al., 2022; Aflakseir et al., 2018), the present research confirms the vital role of social support in facilitating positive growth. The positive correlation between social support and growth mirrors the theory that social ties provide emotional, informational, and instrumental resources which bolster psychological resilience in the face of adversity. This is particularly relevant in collectivist cultures where familial and community ties are integral to personal identity and coping mechanisms (Benson et al.2020).

These insights underscore the need for holistic cancer care approaches that integrate psychosocial support. Healthcare providers should be encouraged to facilitate support groups, offer counseling services, and ensure that patients have access to comprehensive care that addresses not just the physical but also the emotional and social aspects of cancer treatment. The comparability/similarity of observed findings to that of previous research highlights the relevance, applicability and importance of the coping and social support concepts in breast cancer outcomes across countries and cultural settings. While many women find strength and growth through their cancer experience, it's important to acknowledge that each journey is unique. Not all women may experience positive growth, and the availability and effectiveness of social support can vary greatly. Healthcare providers should be sensitive to these differences and offer individualized care and support (Benson et al.2020).

While the current study provides valuable insights, it is limited by its cross-sectional design and the specific cultural context. Future research should aim for longitudinal studies to track changes in coping and growth over time and explore these phenomena in diverse cultural settings. Additionally, intervention studies could assess the effectiveness of specific support and coping strategies in enhancing positive growth (Maghsoodi & Salehinejad, 2020).

In conclusion, the study contributes significantly to our understanding of positive growth in breast cancer patients, highlighting the importance of coping strategies and the indispensable role of social support. These findings

advocate for patient-centered, empathetic healthcare practices that acknowledge and support the psychological and social needs of breast cancer patients, facilitating not just survival but also improved quality of life and positive psychological growth. On the other hand further studies are needed to explore whether the observed effects are replicated in relapse breast cancer patients or those with more advanced stages of cancer.

Despite its limitations, the present study demonstrates the importance of coping and social support in determining patient outcomes following treatment for breast cancer, a finding that appears to be robust across studies conducted in different countries and cultural settings. The results underline the need and potential value of psychosocial interventions to promote adaptive coping strategies and to ensure the provision of psychosocial support for women who undergo treatment for breast cancer.

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