

# Modeling of Resilience Based on the Five-Factor of Personality with the Mediation of Coping Strategies and Psychological Capital in Breast Cancer

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## Abstract

**Objective:** Some factors, such as personality type, coping styles, and psychological capital, have an effect on the resilience of women with breast cancer. The purpose of the study is to investigate the structural relationship of these factors with each other.

**Method:** The subjects of this study were 231 women (20-55 years old) diagnosed with breast cancer and treated at the breast cancer department of Imam Khomeini Hospital in Tehran in 2022-2023. The Tebachnik and Fidel's formula (2007) was used to estimate the sample size. Psychological resilience (Connor & Davidson, 2003), NEO-PI personality questionnaire (Costa & McCrae, 1992), and coping strategies questionnaire (Endler & Parker, 1990) were used to measure the research variables.

**Results:** Therefore, five personality factors can lead to an increase in resilience through coping strategies and psychological capital. In addition, the path coefficients of the two-way relationship of the variables showed that 44% of the changes in resilience were influenced by personality, 97% of the changes in coping strategies were influenced by personality, 91% of the changes in psychological capital were influenced by personality and 20% of the changes in resilience were influenced by personality. The effect of coping strategies and 36% of the changes in resilience showed the effect of psychological capital.

**Conclusion:** One of the determining factors of resilience in a chronic disease such as breast cancer is the role of personality traits, which is influenced by positive psychological variables such as coping strategies and psychological capital of the patient

**Keywords:** Resilience, Personality traits, Coping styles, Psychological capital, Health psychology.

## Extended Abstract

### Background and Objective:

Breast cancer is the most commonly diagnosed type of cancer and the second leading cause of cancer-related death among women worldwide. Individual resources, including coping strategies, personality, and other psychological capacities considered important factors (Mehrinejad, Rajabimoghadamb & Tarsafi, 2015).

Resiliency is an important psychosocial factor in breast cancer (Luthar, Cicchetti & Becker, 2000).

The Five-Factor Model is typically taken as the reference when operationalizing personality (Costa & McCrae, 1992). This model comprises five broad categories, namely, neuroticism, extraversion, openness, agreeableness, and conscientiousness (Chavarro-Nieto et al, 2023). Negative relations have been found between resilience and neuroticism, and resilience has been positively associated with the other traits (see Oshio, Taku, Hirano, & Saeed, 2018, for a review).

Another variable related to resilience is coping strategies,

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which play an important role in the process of accepting and treating breast cancer. Women with breast cancer use emotional coping styles more when facing challenges (Dehghani & Malakzade, 2018). People with neuroticism choose a passive style, such as emotion-oriented and avoidance strategies, and extroverted people choose active coping strategies and receive social support (Burro, Vicentini, & Raccanello, 2023).

Coping strategies can be predicted by knowing more about and better personality factors. The main problem of this research is the Structural modeling of resilience based on the five-factor model of personality, with the mediation of coping strategies and psychological capital in women with breast cancer.

### Materials and Methods

The method of the present research is a correlational type (Structural modeling). The statistical population of women with cancer includes all women between the ages of 20 and 55 years old with breast cancer who were admitted to the Cancer Institute department of Imam Khomeini Hospital in Tehran in 2022- 2023 and were diagnosed less than two months ago. The formula proposed by Tebachechnik and Fidel (2007) was used to estimate the sample size. The number of sample people was 255. The measurements include of *Resilience questionnaire, the five-factor model of personality, the coping strategies questionnaire, and the Psychological capital questionnaire*. Unfortunately, 24 women were left out of the study, and finally, 231 remained in the sample group. Finally, 231 questionnaire packages were prepared for data entry and data analysis with SmartPLS2 and SPSS 26 software.

### Results

The five-factor model of personality is related to resilience, with the mediating role of coping strategies in women with breast cancer. The five-factor relationship between personality and coping strategies through mediation is meaningful. The standardized coefficient of the path between the 5 factors of personality and resilience (0.447)

indicates that mental health directly explains 0.447 thousandths of changes in resilience. The five-factor model of personality is related to resilience, with the mediating role of psychological capital in women with breast cancer. Two coefficients of 0.914 and 0.365 also show that the five-factor variable of personality indirectly and through the mediating variable of psychological capital has an effect of 33 percent on resilience.

### Discussion

The five factors of personality can lead to an increase in resilience through psychological capital. Here, the effect of the five personality factors on resilience is not direct, but rather through the effect it has on the mediating variable of psychological capital. Based on the results of the present research, the influence of personality traits on the level of resilience of women diagnosed with breast cancer is through the influence of the personality type of this category of women on the type of selective coping strategy and psychological capital in them. In fact, according to this personality model, it affects stress-related processes through the impact on the amount of confrontation with stress, the type of reaction to it, or both (Landerio & Castillo, 2010). As a result, since personality traits encourage people to use different coping strategies, people respond differently to stress (Bartley & Roeck, 2011). Because problem-oriented coping, as a mediator variable, has a positive effect on resilience and emotion-oriented coping hurts Resilience, people with high neuroticism (who use emotional coping), compared to extroverts and conscientious people (who use problem-oriented coping), show less resilience.

**Conclusion:** Based on the results, personality traits can affect the level of resilience of a patient with breast cancer through the selection of a type of coping strategy, as well as influencing their psychological capital. In other words, the big five personality factors, including conscientiousness, agreeableness, openness to experience, neuroticism, and extroversion, lead to a person using certain coping strategies and having protective psychological factors that increase their resilience when suffering from a chronic disease

such as breast cancer. It is suggested that in the group therapy sessions of women with cancer, the capabilities of their personality traits should be considered, problem-solving skills and emotional regulation should be trained, and the healthy and efficient coping style, social support, and psychological capital should be reinforced to increase resilience in dealing with breast cancer.

## Introduction

Cancer is the second cause of death in America and the third cause of death in Iran, after cardiovascular diseases (Farhood, Geraily & Alizadeh, 2018). Breast cancer is the most commonly diagnosed type of cancer and the second leading cause of cancer-related death among women worldwide (Siegel, Miller & Jemal, 2016). Currently, according to evidence, 1.6 million cases of breast cancer occur in the world every year (Ferlay & et al., 2018). In Iran, more than 25% of cancers in women are breast cancer (Farahbakhshbeh, Mehri Nejad & Moazedian, 2019), and every year 14 00 people die from breast cancer (Shayegan & Naseri, 2018). Cancer diseases, especially breast cancer in women, are increasing dramatically. On the other hand, there is a close relationship between psychological conditions and cancer. Considering that any change in human life is associated with stress, among the consequences of the diagnosis of this disease can be the occurrence of anger, rage, depression, loneliness, emptiness, meaninglessness, and jealousy (Khosravi, 2021).

Cancer, as a chronic disease, has a slow and gradual onset and continues for a long and uncertain period. Therefore, it is crucial to investigate the psychological factors affecting the occurrence of this disease, which can play a role before and after contracting it. Access to appropriate resources for a person with cancer affects adaptation to the disease. Among these, individual resources including coping strategies, personality, and other psychological capacities are considered important factors (Mehrinejad, Rajabimoghadamb &

Tarsafi, 2015).

Resiliency is an important psychosocial factor in breast cancer (Luthar, Cicchetti & Becker, 2000). It is one of the factors that can moderate the adverse effects of problems and diseases and has been conceptualized as one of the main structures of personality to understand motivation, emotion, and behavior (Block, 2002). Resilient people do not have self-destructive behaviors; they are emotionally calm and can transform stressful situations. The central core of the structure of resilience is the presupposition that there is a "biological nature" for growth and perfection in every human being (for example, the self-correcting nature of the human organism that can be revealed naturally and under certain environmental conditions) (Freiberg et al., 2016). Resilience emerges when the disaster is over and basic human needs are met. Adverse effects are modified, moderated, or even disappear because of the resilience process (Masten, 2021). Many pieces of evidence show that resilience is considered a defense mechanism to deal with the emotional and social stressors of breast cancer diagnosis and related to its treatment (Tugade, Fredrickson & Feldman, 2004). Many pieces of evidence show that resilience is considered a defense mechanism to deal with the emotional and social stressors of breast cancer diagnosis and related to its treatment (Gouzman, 2015).

Resilience is a construct that has been studied from different perspectives (Bonanno, Westphal & Mancini, 2011; Salisu & Hashim, 2017; Southwick, Bonanno, Masten, et al., 2014). One such perspective focuses on resilience as a personality characteristic that manifests in response to life circumstances and individual profiles (Cloninger & Zohar, 2011; Connor & Davidson, 2003; Oshio, Kaneko, Nagamine, & Nakaya, 2003). These profiles reflect an individual's characteristic thoughts, feelings, and behaviors, namely, personality (Wagner, Loudtke & Robitzsch, 2019). The Five-Factor Model is typically taken as the reference when

operationalizing personality (Costa & McCrae, 1992). This model comprises five broad categories, namely, neuroticism, extraversion, openness, agreeableness, and conscientiousness (Chavarro-Nieto et al., 2023). A resilient personality is characterized by high levels of extraversion, agreeableness, conscientiousness, openness, and low levels of neuroticism (Alessandri, De Felice, & Zeng, et al., 2014).

In general, negative relations have been found between resilience and neuroticism, and resilience has been positively associated with the other traits (see Oshio, Taku, Hirano, & Saeed, 2018, for a review). Neuroticism and extraversion have been more specifically related to resilience (Lou, Wang, Liu & Zhang, 2014), as these traits can be more significantly affected by life events (Ogle, Rubin & Siegler, 2014; Sarubin, Wolf & Giegling, et al., 2015). Considering that neuroticism has been associated with adverse psychological outcomes, such as depression and hopelessness (Chioqueta & Stiles, 2005; Grav, Stordal, Romild & Hellzen, 2012; Hjemdal, Friborg & Stiles, 2012; McDonnell & Semkovska, 2020), its negative effect on resilience is unsurprising. According to research results, resilience has a negative relationship with neuroticism (Akhavi Samarin, Pirsaghi, Amani, & Ghazizadeh, 2024; Besharat, 2023), and a positive relationship with extroversion, agreeableness, and conscientiousness, and a positive correlation with resilience (Lengua, 2002; Tugade & Fredriks, 2004; Hemenover, 2003).

Resilience could be the key to explaining resistance to risk and how people cope with the challenges in their lives (Farber & Rosendahl, 2020). Therefore, another variable related to resilience is coping strategies, which play an important role in the process of accepting and treating breast cancer. The results of studies show that women with breast cancer use emotional coping styles more when facing challenges (Dehghani & Malakzade, 2018). Coping strategies are among the skills that provide resilience against injuries, problems,

and diseases. Recent research has shown that the type of coping strategy used by a person affects not only their mental health but also their physical well-being. The primary approaches to the coping process distinguish three main styles: problem-oriented coping style, which is characterized by direct action to reduce pressures or increase stress management skills, avoidance-oriented coping style, whose main characteristic is to avoid facing the stressful factor, and emotion-oriented coping style, which is characterized by cognitive strategies that It delays the resolution or removal of the stressor by giving it a new name and meaning (Zidner & Endler, 1996). Problem-focused coping strategies can increase resilience; the type of coping strategies a person chooses in stressful situations is related to their personality traits.

Among the issues raised in the resilience field, according to Blauger & Zuckerman (1997), the type of coping strategy depends on the personality traits of people (Bartely & Roesch, 2011). Based on the literature about the Big Five, we generally expect extraversion, agreeableness, conscientiousness, and open-mindedness to act as protective factors and negative emotionality (or neuroticism) to act as risk factors in different situations. The results showed that people with neuroticism choose a passive style, such as emotion-oriented and avoidance strategies, and extroverted people choose active coping strategies and receive social support (Burro, Vicentini, & Raccanello, 2023).

Because the five-factor model of personality and coping strategies could predict resilience, psychological capital can be one of the strong predictors of resilience. Psychological capital is a concept that has recently been proposed by the inspiration of positive psychology and in the framework of the criteria of positive behavior. Psychological capital is an idea beyond personality traits and traditional capital of the organization (material, human, and social capital). According to theorists and researchers, it is a new



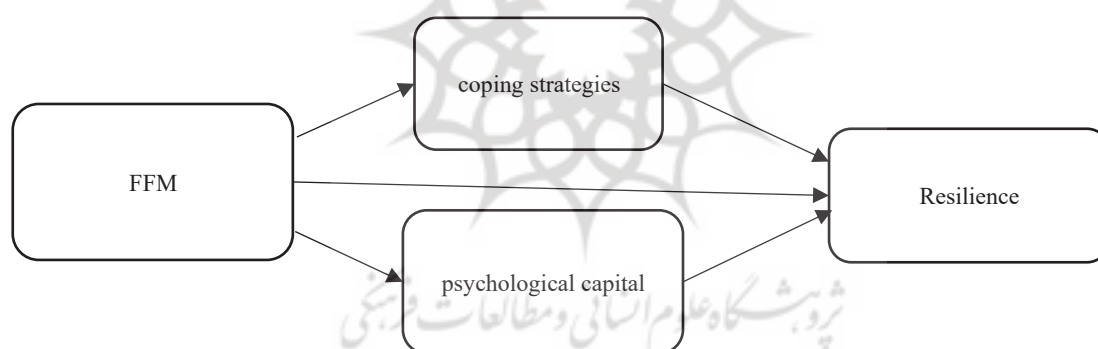
basis for creating a competitive advantage in mental health. For this reason, this concept soon found its place and importance in human resource management approaches and introduced a new school in human resource management and development.

Psychological capital is a positive psychological development state with the characteristics of commitment and making the necessary effort to succeed in challenging tasks (self-confidence/self-motivation), having a positive statement about current and future successes (optimism), persistence on the way to the goal and if necessary change the path to reach the goal to achieve success (hope) and persistence when facing difficulties and problems to achieve success (Rasoli, Ahmadian, Jadidi & Akbari, 2020). In Rabenu, Yaniv, and Elizur's (2017) study, psychological capital was found to have a strong, positive, and direct correlation with well-being and performance, and coping strategy

and psychological capital can significantly predict the changes related to endurance in people with breast cancer. Therefore, coping strategies can be predicted by knowing more about and better understanding personality factors. The main problem of this research, which the author attempts to explain, is the structural modeling of resilience based on the five-factor model of personality with the mediation of coping strategies and psychological capital in women with breast cancer. The hypotheses of this research are:

- 1- The five-factor model of personality is related to resilience with the mediating role of coping strategies in women with breast cancer.
- 2- The five-factor model of personality is related to resilience with the mediating role of psychological capital in women with breast cancer.

The conceptual model of the study is shown below:



in terms of change partially mediated the relationship between psychological capital and the outcomes of well-being and performance. In the Gupta et al. (2019) study, positive correlations were found between all the dimensions of psychological capital and functional coping style, and a negative relationship was found between the dimensions of psychological capital and dysfunctional coping style.

Research has shown that neurotic people have less resilience, and there is a negative correlation between resilience and psychological well-being, depression, anxiety, and general health problems. Personality traits

## Method

Regarding the aims of the research, the research method is correlational. This study tested the structural modeling of resilience based on the five-factor model of personality with the mediation of coping strategies and psychological capital in women with breast cancer. The statistical population of women with cancer includes all women between the ages of 20 and 55 with breast cancer who were admitted to the Cancer Institute Department of Imam Khomeini Hospital in Tehran in 2022 - 2023 and were diagnosed less than two months ago. The formula proposed by Tebachnik

and Fidel (2007) was used to estimate the sample size. Based on the proposed formula, the minimum sample size in correlation studies is calculated using the formula  $m+50 \leq n$  ( $p > 5 > 15$ ). In this formula,  $n$  is the sample size,  $p$  is a constant number between 5 and 15, and  $m$  is the number of variable components. Based on this rule, the number of people in the sample was as follows:

$$(15 \times 17) + 50 = 255$$

The number of variable components is 17 (5 personality traits, 3 coping strategies, 4 psychological capitals, and 5 resilience), and the sample size is at least 255 people.

## Measurement

*Resilience questionnaire:* Connor and Davidson (2003) created the Psychological Resilience Scale. This scale consists of 25 questions. It is scored on a five-point Likert scale (never, a little, a fair amount, a lot, and a great deal). The minimum score for resilience on this scale is zero, and the maximum score is 100. The top of the scale reflects more resilience. The results of the preliminary study on the psychometric properties of this scale confirmed its reliability and validity (Connor & Davidson, 2003). The internal consistency coefficient, retest coefficient, and convergent and divergent validity of the scale have been well reported. The reliability and validity of the Persian form of the Resilience Scale have also been examined and confirmed in preliminary studies on normal and sick samples. Mohammadi (2004) has standardized this scale. In the research of Samani, Jokar & Sahragerd (2008), Cronbach's alpha coefficient of 0.87 was obtained for the reliability of this test. In addition, the results of the factor analysis test on this scale indicated the existence of a general factor in the scale. The value of the coefficient for this analysis was 0.89, and the value of Bartlett's sphericity test was 18.83. The value of the eigenvalue for this general factor was 6.64. This factor accounts for 26.6% of the total variance of the scale. The internal consistency reliability coefficient

of this scale was reported as 0.89 through Cronbach's alpha coefficient. In this study, this value was 0/79.

*The five-factor model of personality:* The 60-item NEO questionnaire is a revised version of the NEO-PER personality questionnaire (Costa & McCrae, 1992). It is a self-assessment of personality traits based on a well-known personality model called the five-factor model. Goldberg, 1993). The five-factor model has been evolving for four decades (Digman, 1990) and is a product of the vocabulary tradition (analysis of traits in English and other languages) and the tradition of factor analysis in personality research. According to the version of Revised in the Revised NEO personality questionnaire, the five factors or domains are (1- neuroticism, 2- extroversion, 3- openness to experience, 4- agreeableness, and 5- conscientiousness). This questionnaire is a scored Likert scale used in research, the short form of the questionnaire, 60 questions, which was standardized by Grossi (2013). The alpha coefficient obtained in Grossi's research was found to be 0.95. In addition, its validity was checked with the logical methods of content validity. Furthermore, it was approved. In this study, the internal consistency reliability coefficient of this scale was obtained as 0.87 through Cronbach's alpha coefficient.

*Coping strategies questionnaire:* Endler and Parker (1990) created the Coping with Stressful Situations Questionnaire to evaluate how people deal with their problems. This test has 48 statements and three main coping styles, i.e. problem-oriented coping, which means controlling emotions and planning to solve the problem step by step, emotion-oriented coping, in which the person instead of focusing on the problem itself, focuses on the emotions caused by it and attempts to reduce negative emotions instead of solving the problem, and the avoidant coping style that avoids facing the problem in a person, the subscale of avoidant coping is divided into two dimensions of social entertainment and attention seeking. Parker &

Endler (1990) reported the validity coefficient of this test, which was compared with other tests, for three areas of problem-oriented coping: 0.91 and 0.87, for problem-oriented coping. In addition, its reliability coefficient was reported as 0.92, 0.90, and 0.90, respectively, for the three fields. Abedini (2004) also reported the reliability of this questionnaire as 0.89. In this research, the internal consistency reliability coefficient of this scale was obtained as 0.91 through Cronbach's alpha coefficient.

*Psychological capital questionnaire:* Lutans et al.'s psychological capital questionnaire (2007) was used to measure psychological capital. In this questionnaire, standardized values have been used that broadly measure the structures that measure hope, resilience, optimism, and self-efficacy, and the validity and reliability of these subscales have also been proven. This questionnaire has 24 questions and 4 subscales. Each scale contains six items. A Likert scale is used. Sharifi and Shahtalebi (2015) calculated the Cronbach's alpha of this questionnaire as 0.90. The construct validity of this questionnaire was confirmed using exploratory factor analysis and correlation. In this study, the internal consistency reliability coefficient of this scale was obtained as 0.85 through Cronbach's alpha coefficient.

### Procedure

The necessary coordination was done with the authorities of the Breast Cancer Institute department and the angiography department of Imam Khomeini Hospital in Tehran to conduct the research (which is a suitable center for collecting samples due to its geographical location, range, and the number of clients and providing specialized services for women). Then, the researcher (psychology graduate student), with the idea of the study, the sample characteristics, and how to conduct the research, distributed questionnaires in sample groups. Due to the arrangements with the authorities of the health and treatment center, after

preparing the questionnaires, the required numbers were given to the presenters, and they attended the clinic during working hours. She gave the questionnaires to the women who met the inclusion criteria and retrieved them after providing the necessary information and giving them sufficient time to complete them. Based on the sample size formula, 250 questionnaires were distributed to the sample group. Questionnaires were reviewed, and several cases were rejected because of some defects. Unfortunately, 24 women were left out of the study, and finally, 231 remained in the sample group. Finally, 231 questionnaire packages were prepared for data entry and data analysis with SmartPLS2 and SPSS 26 software.

### Ethical Statements

Ethical considerations were fully observed in all stages of the research so that the necessary and sufficient information about the purpose of the work and how to implement it was explained to the participants at the beginning of the research, and all participants participated in the research voluntarily without any obligation. The result was completely encrypted and analyzed in a coded manner.

### Results

In terms of gender distribution, 18 of the patients (7.79 percent) were between 20-25 years old, 56 people (24.24 percent) were between 26-30 years old, 53 people (22.94 percent) were between 31-35 years old, and 104 people (45.02 percent) were between 36 -40 years. In terms of the marriage status of sample groups, 69 people (30%) were single, 108 people (46.7%) were married, 31 people (13.3%) were divorced, and 23 people (10%) were widows. In terms of education level, 104 people (45%) had bachelor's degrees, 73 people (31.7%) had diplomas and advanced degrees, 46 people (20%) had bachelor's degrees, and 8 people (3.3%) had master's degrees. The PLS (structural equation modeling) method was used to

evaluate the appropriateness of the proposed model for investigating the relationships among variables. In this part, the reliability of the identified factors has been investigated using Cronbach's alpha coefficient, combined reliability, and factor loadings.

### Combined Reliability Coefficient (CR)

If the composite reliability value for each factor is higher than 0.7, it indicates the appropriate internal stability for the measurement model. The obtained combined reliability coefficients for each factor of the

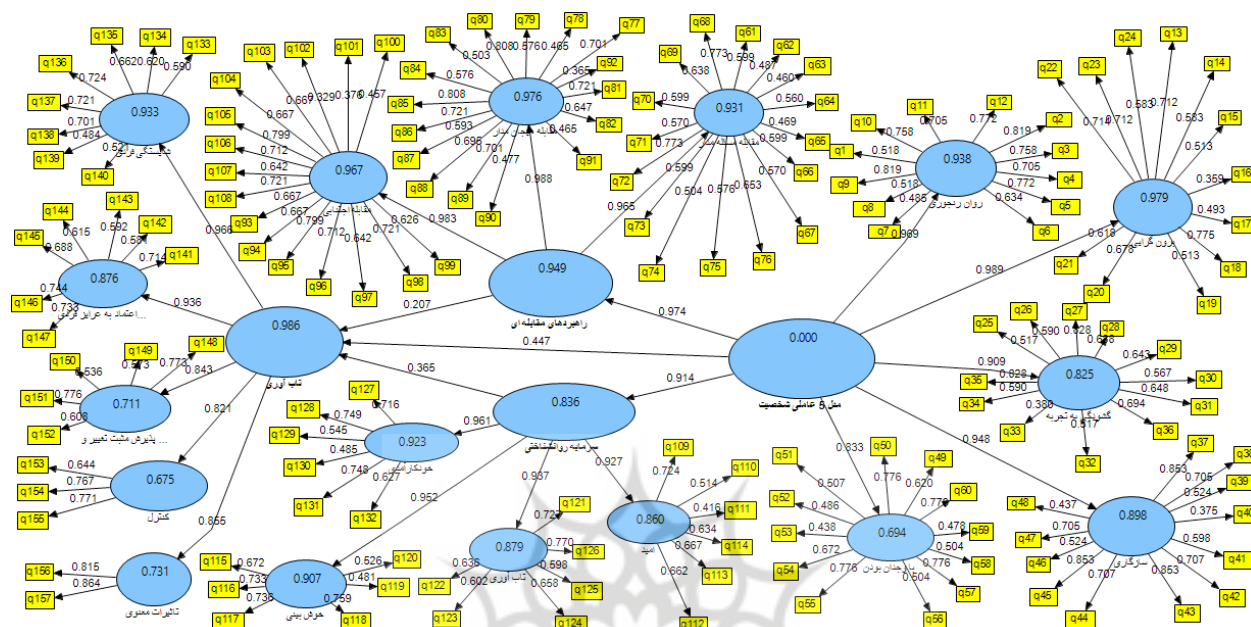
**Table 1:** Cronbach's alpha values related to variables and combined reliability of the variables, R2, and Q2 value for variables

| Variables                   | Subscales                                                      | Cronbach's alpha coefficients | CR   | R 2  | Amount of fitness | Q2   | Amount of fitness |
|-----------------------------|----------------------------------------------------------------|-------------------------------|------|------|-------------------|------|-------------------|
| Five factors of personality | Neuroticism                                                    | 0/90                          | 0/91 | 0/93 | strong            | 0/45 | strong            |
|                             | Extraversion                                                   | 0/84                          | 0/87 | 0/92 | strong            | 0/36 | strong            |
|                             | Openness                                                       | 0/86                          | 0/78 | 0/88 | strong            | 0/33 | strong            |
|                             | Agreeableness                                                  | 0/87                          | 0/90 | 0/89 | strong            | 0/40 | strong            |
|                             | Consciousness                                                  | 0/84                          | 0/87 | 0/69 | strong            | 0/23 | moderate          |
| Coping strategies           | Problem-focused                                                | 0/88                          | 0/89 | 0/97 | strong            | 0/31 | strong            |
|                             | Emotion-focused                                                | 0/89                          | 0/90 | 0/96 | strong            | 0/38 | strong            |
|                             | Avoidance coping                                               | 0/90                          | 0/91 | 0/94 | strong            | 0/40 | strong            |
| Psychological capital       | Hope                                                           | 0/72                          | 0/77 | 0/87 | strong            | 0/31 | strong            |
|                             | Resilience                                                     | 0/74                          | 0/82 | 0/87 | strong            | 0/34 | strong            |
|                             | Optimism                                                       | 0/73                          | 0/81 | 0/90 | strong            | 0/37 | strong            |
|                             | Self-efficacy                                                  | 0/72                          | 0/81 | 0/92 | strong            | 0/38 | strong            |
| resilience                  | Individual Competence Control                                  | 0/78                          | 0/84 | 0/93 | strong            | 0/37 | strong            |
|                             | Trusting individual instincts and tolerating negative emotions | 0/79                          | 0/84 | 0/87 | strong            | 0/37 | strong            |
|                             | Positive acceptance of change and secure relationships         | 0/74                          | 0/79 | 0/71 | strong            | 0/30 | strong            |
|                             | Control                                                        | 0/75                          | 0/77 | 0/67 | strong            | 0/34 | strong            |
|                             | Spiritual effects                                              | 0/70                          | 0/82 | 0/73 | strong            | 0/49 | strong            |



(Davari & Rezazadeh, 2012). The values of the factor loadings between the constructs and their indices are shown in Figure 1.

According to Figure 1, all factor loading coefficients



**Figure 1: Model in path coefficient mode**

of the questions are greater than 0.4, indicating this criterion's appropriateness.

Hypothesis 1: The five-factor model of personality is related to resilience with the mediating role of coping strategies in women with breast cancer.

Because the significance test is indirect, using the Sobel formula, the value of the t statistic was calculated and equaled to 2.29. Based on the results of table (2), considering that the value of t statistic (2.29) is more than 1.96; therefore, at the 95% confidence level, it can be concluded that the five-factor relationship between personality and Bringing coping strategies through mediation is meaningful. The standardized coefficient of the path between the five factors of personality and resilience (0.447) indicates that mental health directly explains 0.447 thousandths of changes in resilience. Two coefficients of 0.974 and 0.207 also show that the five-factor variable of personality indirectly and

**Table 2:** the test of hypothesis

| Independent variable             | Moderate variable     | Dependent variable    | Type of question | Path coefficient |                 |              | t       | consequence |
|----------------------------------|-----------------------|-----------------------|------------------|------------------|-----------------|--------------|---------|-------------|
|                                  |                       |                       |                  | Direct effect    | Indirect effect | Total effect |         |             |
| Five-factor Model of Personality |                       | resilience            | main             | 0/447            |                 | 0/447        | 4/741   | approved    |
| Five-factor Model of Personality |                       | Psychological capital | main             | 0/914            |                 | 0/914        | 42/203  | Approved    |
| Five-factor model of personality |                       | Coping strategies     | main             | 0/974            |                 | 0/974        | 147/602 | Approved    |
| Coping strategies                |                       | resilience            | main             | 0/207            |                 | 0/207        | 2/242   | approved    |
| Psychological capital            |                       | resilience            | main             | 0/365            |                 | 0/365        | 8/630   | approved    |
| Five-factor Model of Personality | Coping strategies     | resilience            | main             | 0/447            | 0/201           | 0/648        | 2/29    | approved    |
| Five-factor Model of Personality | Psychological capital | resilience            | main             | 0/447            | 0/333           | 0/780        | 8/94    | approved    |

through the mediating variable of coping strategies, by the amount of 21 percent ( $0.974 \times 0.204$ ) has an effect. Therefore, five factors of personality can lead to increasing resilience through coping strategies. Here, the effect of the five factors of personality on resilience is not direct, but through the effect it has on the mediating variable of coping strategies.

Hypothesis 2- The five-factor model of personality is related to resilience with the mediating role of psychological capital in women with breast cancer.

Because the significance test is indirect, using the Sobel formula, the value of the t statistic was calculated and it was equal to 8.94. Based on the results of table 4-15), considering that the value of t statistic (8.94) is more than 1.96, therefore, at the 95% confidence level, it can be concluded that the five-factor relationship between personality and The mediation of psychological capital is meaningful. On the other hand, the standardized

coefficient of the path between the five factors of personality and resilience (0.447) indicates that mental health directly explains 0.447 thousandths of changes in resilience. On the other hand, two coefficients of 0.914 and 0.365 also show that the five-factor variable of personality indirectly and through the mediating variable of psychological capital has an effect of 33 percent ( $0.914 \times 0.365$ ) on resilience. It has an effect. Therefore, five factors of personality can lead to an increase in resilience through psychological capital. Here, the effect of the five personality factors on resilience is not direct, but through the effect it has on the mediating variable of psychological capital.

## Discussion

Breast cancer is a major health problem and a life-threatening chronic disease in women that causes a lot of stress and requires special coping skills.

In addition, these patients also experience other psychological problems such as depression and anxiety. Some of these patients overcome this stress, but others succumb to the conditions, which can be explained based on important fundamental factors such as coping strategies, psychological capital, and personality type. The research results showed the five personality factors could lead to increasing resilience through coping strategies and psychological capital.

In confirming the relationship between the big five factors of personality and resilience, the results of the research are consistent with the body of literature (Alessandri et al., 2014; Lu, Wang, Liu, & Zhang, 2014; Chioqueta & Stiles, 2005; Grav, Stordal, Romild & Hellzen, 2012; Hjemdal, Friborg & Stiles, 2012; McDonnell & Semkovska, 2020; Beshart, 2023; lengua, 2002; Tugade & Fredriks, 2004; Hemenover, 2003), for example in the review article by Burro and et al, (2023) and review article by Oshio,tako, Hirano, and Saeed (2018) that showed a stronger negative relationship with Neuroticism, and stronger positive relationships with openness, conscientiousness, and agreeableness. Indeed, resiliency is one of the traits in personality. Neuroticism has a negative relationship with resilience. This trait includes negative emotions, including feelings of anger, sadness, and sadness, and people with negative emotions show maladjustment in facing stressful situations. In addition, Campbell-Selis, Cohen, and Stein (2006) point out that vulnerability to stress is one of the traits of neurotic people. For this reason, neurotic people also use emotion-centered coping strategies in dealing with big stress such as cancer.

Due to the wrong cognitive evaluation, neurotic people do not allow themselves to think and review the problem and do not understand the situation correctly, as a result, they use an ineffective coping style such as emotion-oriented (Watson & Clark, 1992). Since problem-oriented coping as a mediating variable has a positive effect on resilience and

emotion-oriented coping hurts resilience, neurotic people with emotional coping have less resilience than extroverted and conscientious, agreeable, and open-to-experience people (burro, et al, 2023). People with high neuroticism are anxious and depressed and easily change their mood. They are generally characterized by poor well-being, psychological distress, and high scores for indicators of negative psychological functioning (Anglim et al., 2020). Low neuroticism, together with high Conscientiousness, has the strongest associations with both physical and mental health (Bogg & Roberts, 2013; Friedman & Kern, 2014; Strickhouser et al., 2017). Moreover, neurotic people tend to react through maladaptive coping, rarely using reappraisal (Costa & McCrae, 2006).

Resilience has a positive relationship with extroversion, a subject that includes positive emotional style and positive emotions, close interpersonal relationships, and high levels of interactions and social activity (Tugade & Frederickson, 2004). Considering the facet traits distinction (Costa & McCrae, 2010; Soto & John, 2017), extroverted people can be described as sociable, assertive, and full of energy. They are usually expected to be actively engaged in social relations (McAdams, 2015). They cope with events through reappraisal and negotiate with others using an assertive rather than a passive or aggressive style (Bagherian & Mojambari, 2016). Moreover, this trait is frequently associated with subjective well-being (Li et al., 2015; Anglim et al., 2020).

Positive emotions increase the active efforts to face the tension and can promote the belief that the efforts are successful. Having a high level of extroversion with resilience in stressful situations such as breast cancer is an adaptive trait because it increases the probability of seeking social support, and they receive more care and attention, which increases their resilience against the disease. Extroverted people have stronger social activity and interpersonal relationships and use more problem-oriented coping styles when facing tension.

Regarding conscientiousness and coping strategies, conscientious people have stronger self-efficacy and can use problem-oriented stress-coping strategies in dealing with stress. (Bashart, 2016). Stanisławski (2019) has proven that problem-oriented coping promotes effective recovery from stressful situations. Conscientious people are organized, persistent when engaged in a task, and reliable. They are used to respect rules and recommendations, positively valuing achievement, order, hard work, and efficiency (Barrick & Mount, 1991; Roberts et al., 2005), and also utilize, especially when goal progress is threatened, an assertive style (Bagherian & Mojambari, 2016). The hard efforts of conscientious people lead them to this coping style, which leads to their success in stressful situations and promotes their self-efficacy.

It seems that the general tendency to respond to adversity with an active problem-solving approach increases the resilience of conscientious people. Conscientious people are organized, persistent when engaged in a task, and reliable. They are used to respect rules and recommendations, positively valuing achievement, order, hard work, and efficiency (Barrick & Mount, 1991; Roberts et al., 2005), and also utilize, especially when goal progress is threatened, an assertive style (Bagherian & Mojambari, 2016). Agreeable people are characterized by compassion, are respectful, and think the best about other individuals. They are emphatic, care about others, and are prone to prosocial behaviors such as helping or donating (Habashi et al., 2016). People with high Open-Mindedness are fascinated by art, intellectually curious, and creative. Thus, they are open to new experiences and capable of adapting easily to them (Schmutte and Ryff, 1997; McAdams, 2015), also concerning shifting to online learning (LePine et al., 2000). In addition, they are prone to prosocial behavior (Kline, Bankert., Levitan & Kraft, 2019).

Regarding the relationship between Five Personality Factors with Psychological Capital and coping

strategies, recent studies document also the Big Five factors' specificity from a neurobiological perspective (DeYoung, 2015; Davis & Panksepp, 2018; Marengo et al., 2021). In the literature, there are also other models conceptualizing personality traits (Anglim & O'Connor, 2019; Bacon et al., 2022). The sixth factor derives from differently portioning the variance, which related to Big Five Agreeableness and Negative Emotionality to HEXACO Agreeableness, Negative Emotionality, and Honesty-Humility (Bacon et al., 2022). Women with Negative Emotionality were significantly and positively related to Despair, a pattern of coping strategies focused on helplessness and negative emotional reactions, spanning from panicking to the complete absence of hope. This result confirms a very high number of previous findings documenting that neurotic people are prone to distress and psychopathology, in a variety of situations (Bogg & Roberts, 2013; Friedman & Kern, 2014; Strickhouser, Zell & Krizan, 2017; Anglim et al., 2020).

On the other hand, agreeableness, conscientiousness, and open-mindedness revealed their protective role. In our database, they were generally significantly related to each of the four factors, negative with despair and aversion. Positive psychological capital includes high self-efficacy, optimism, hope, and resilience (Luthans, Grossman & Small, 2015) in conscientious people with high self-efficacy and planning, as well as pleasant and extroverted people who are open to experience due to high social support, and positive and pleasant emotions. They also have vision, hope for the future, and higher automaticity. For these reasons, neurotic people lack the necessary psychological capital to face stress, such as chronic breast cancer. Conscientiousness concerns the goals that interest a person's attention. People with a high score are inclined to listen to pursue consciously several goals purposefully. He/she is, hence, highly dependent, achievement-oriented and defensive. Openness to experience happens when an individual is attracted



by innovation and novelty and is inclined to be intellectual, imaginative, and sensitive. He/she appears to be more conventional with his/her openness and reveals enjoyment in familiarity (Robbins & Judge, 2011). Neuroticism concerns the individual's ability to tolerate stress and perform stability of positive emotion, which is indicated by calm, security, and passion (Robbins & Judge, 2011).

Extroversion concerns pleasure at the individual level in communicating with another. Highly extroverted people are inclined to be recognized as open and friendly. Meanwhile, introverts are not fully open and feel happier if they find themselves in solitude. People with high agreeableness believe in other people, are cooperative, and are easy to please (Yuniawan & Rudin, 2020). Hence, these specifics can facilitate psychological capital in coping with stress, such as breast cancer. Therefore, based on the results of the present research, the influence of personality traits on the level of resilience of women diagnosed with breast cancer is through the influence of the personality type of this category of women on selective coping strategy and psychological capital in them. Indeed, data from the literature indicate that extraversion has a positive effect on subjective well-being (Zager Kocjan, Kavčič, & Avsec, 2021) and was negatively correlated with generalized anxiety and depressive symptoms (Nikčević et al., 2021), but it was also positively associated with stress (Kocjan et al., 2021), negative emotional reactions (Kohút et al., 2021), and a more negative perception of the situation, but only for participants without a partner (Schmiedeberg & Thönnissen, 2021).

Agreeableness and Conscientiousness had a positive effect on subjective well-being (Kocjan et al., 2021) and were negatively correlated with generalized anxiety and depressive symptoms (Nikčević et al., 2021). Negative Emotionality was associated negatively with subjective well-being (Kocjan et al., 2021) and positively with negative emotions (Kohút et al., 2021),

with a more negative perception of the restrictions to daily life (Schmiedeberg & Thönnissen, 2021), and with stress, anxiety, and depression (Qian & Yahara, 2020; Kocjan et al., 2021; Nikčević et al., 2021). Some studies also reveal that, among the five traits, Negative Emotionality was the strongest predictor of the worst psychological functioning (Kocjan et al., 2021) and was most related to poor mental health (Bacon et al., 2022). Open-Mindedness was negatively linked with generalized anxiety and depressive symptoms (Nikčević et al., 2021), but it also had negative effects on subjective well-being (specifically, when mediated by individuals' resilience) and positive effects on stress (Kocjan et al., 2021). About the mediating role of coping strategies in the relationship between resilience and personality, as well as the relationship between resilience and personality, among the issues raised in the field of resilience is the role of personality traits.

According to "the differential coping-choice model" of Blauger and Zuckerman (1997), the coping strategies used in dealing with stress determine the positive and negative outcomes, and the type of coping strategy chosen depends on the individual's personality traits (Bartley & Roech, 2011). In fact, according to this personality model, it affects stress-related processes through the impact on the amount of confrontation with stress, the type of reaction to it, or both fields (Landero & Castillo, 2010). As a result, since personality, traits encourage people to use different coping strategies, people respond differently to stress (Bartley & Roech, 2011). Because problem-oriented coping, as a mediator variable, has a positive effect on resilience and emotion-oriented coping hurts resilience, people with high neuroticism (who use emotional coping) compared to Extrovert and conscientious people (who use problem-oriented coping) show less resilience.

## Conclusion

Based on the results, personality traits can affect the level of resilience of a patient with breast cancer

through the selection of a type of coping strategy, as well as influencing his psychological capital. In other words, the big five personality factors, including conscientiousness, agreeableness, openness to experience, neuroticism, and extroversion, lead to a person using certain coping strategies and having protective psychological funds that increase his resilience when suffering from a chronic disease such as breast cancer.

It is suggested that group therapy for women with cancer should take into account the capabilities of their personality traits, train problem-solving skills and emotional regulation, and strengthen healthy and effective coping styles, social support, and psychological capital to increase resilience in dealing with breast cancer.

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