THE MEDIATING ROLE OF COPING STRATEGIES IN THE BASIC PERSONALITY TRAITS—PTG AND LOCUS OF CONTROL—PTG RELATIONSHIPS IN BREAST CANCER PATIENTS

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Approval of the Graduate School of Social Sciences

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I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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ABSTRACT

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The aim of the present study is to investigate the relationship of posttraumatic growth with basic personality traits and locus of control, and the mediator role of coping strategies in these relationships. One hundred and fourteen women with breast cancer undergoing chemotherapy/radiotherapy treatment or come to the hospital for their post-operational follow-up appointments were recruited. Seventy two mediation models were performed for posttraumatic growth and its factors as dependent variables. The independent variables were basic personality traits

(extraversion, conscientiousness, agreeableness, neuroticism, openness to experience, and negative valence) and locus of control. The mediators were coping strategies that is problem-focused coping, emotion-focused coping, and seeking social support (indirect coping). The results suggested that problem-focused coping was a significant mediator in PTG—some basic personality traits (extraversion, openness to experience, conscientiousness, agreeableness) and PTG— external locus of control relationships. Moreover, emotion-focused coping was a significant mediator in the relationship of PTG with some personality traits (conscientiousness, agreeableness, and openness to experience) and external locus of control. Seeking social support did also mediate PTG—external locus of control relationship. The implications of the findings, and the strengths and limitations of the study were also discussed in the light of the literature.

Keywords: Posttraumatic growth, breast cancer, basic personality traits, locus of control, coping strategies

ÖZ

MEME KANSERİ HASTALARINDA TEMEL KİŞİLİK ÖZELLİKLERİ—TRAVMA SONRASI GELİŞME VE KONTROL ODAĞI—TRAVMA SONRASI GELİŞME İLİŞKİLERİNDE BAŞETME YÖNTEMLERİNİN ARACI ROLÜ

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Bu çalışmanın amacı travma sonrası gelişmenin temel kişilik özellikleri ve kontrol odağı ile ilişkisi ve başetme yöntemlerinin bu ilişkiler üzerindeki aracı rolünü incelemektir. Çalışmaya kemoterapi/radyoterapi tedavisi alan ya da operasyon sonrası kontrolleri için hastaneye gelen 114 meme kanseri hastası kadın katılmıştır. Travma sonrası gelişme ve faktörleri bağımlı değişkenler olmak üzere toplam 72 aracılık modeli test edilmiştir. Bağımsız değişkenler temel kişilik özellikleri (dışa dönüklük, sorumluluk, geçimlilik, duygusal tutarsızlık, gelişime açıklık, olumsuz

değerlik) ve kontrol odağıdır. Aracı değişkenler problem odaklı başetme, duygu odaklı başetme ve sosyal destek arama (dolaylı başetme) olmak üzere başetme yöntemleridir. Bulgulara göre, problem odaklı başetme, travma sonrası gelişme—bazı temel kişilik özellikleri (dışadönüklük, gelişime açıklık, sorumluluk, geçimlilik) ve travma sonrası gelişme—dışsal kontrol odağı ilişkilerinde anlamlı aracı değişkendir. Bununla birlikte, duygu odaklı başetme, travma sonrası gelişmenin bazı kişilik özellikleri (sorumluluk, geçimlilik, gelişime açıklık) ve dışsal kontrol odağı ile ilişkilerinde anlamlı aracı değişkendir. Sosyal destek arama da travma sonrası gelişme—dışsal kontrol odağı ilişkisinde anlamlı olarak aracılık etmiştir. Son olarak, sonuçların çıkarımları ve çalışmanın güçlü yönleri ve sınırlılıkları ilgili literatür çerçevesinde tartışılmıştır.

Anahtar kelimeler: Travma sonrası gelişme, meme kanseri, temel kişilik özellikleri, kontrol odağı, başetme yöntemleri

To My Family

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INTRODUCTION

Cancer is a group of diseases with increasing incidence and mortality rates**.** It shows itself with the presence of new cells growing beyond control. There are different types of cancer such as lung, prostate, stomach, and colorectal (Brannon & Feist, 2007). Breast cancer, one of these cancer types, is the third most frequent cancer in the world and the most common cancer type among women (23% of all cancers) (Parkin, Bray, Ferlay, & Pisani, 2005). Moreover, it is the second leading cause of cancer deaths among women after lung cancer (Jemal et al., 2009). According to the statistics of Turkish Cancer Statistics Database (2009), breast cancer is the most common form of cancer among females in Turkey with 36.47% incidence rate (cited in Yılmaz et al., 2010). In addition to its high incidence rate, it is quite traumatic, stressful, and threatening experience that may also change the life, social relations and psychological well-being of the patients. After receiving the diagnosis, women with breast cancer have to deal with a very challenging and painful treatment process including surgery, radiation, and chemotherapy. These treatment procedures may cause patients to experience some side effects such as nausea, fatigue, sleep problems, and loss of appetite. In addition to these side effects,

the diagnosis and treatment processes may lead to many negative outcomes such as depression (Yıldırım et al., 2009) and posttraumatic stress disorder (PTSD) (Tokgöz et al., 2008). However, some cancer patients reported that they experience a number of positive changes after this traumatic experience. According to Calhoun (1996), traumatic events have the quality of 'seismic events' and after 'earthquake' of the trauma, some people may change their existing life structures and form stronger ones (cited in Tedeschi, Park, & Calhoun, 1998). This phenomenon is named as posttraumatic growth (PTG).

1.1. Posttraumatic Growth (PTG) and Related Terms

A number of studies have focused on the positive changes after a traumatic experience named as posttraumatic growth in the literature. In order to understand PTG, the term 'trauma' should be precisely defined. According to DSM-IV-TR (American Psychological Association, 2000), to be able to diagnose an experience of trauma as PTSD, two characteristics are required. Firstly, individuals should have been exposed or witnessed to an event involving danger of actual or potential death, serious injury, or threat to physical integrity of themselves or others. Secondly, their individual response to the former event should involve fear, horror, and helplessness. The term "trauma" has not been used in PTG literature as mentioned in DSM-IV-TR, but as a term which refers to negative, highly stressful, and extreme events that is not caused by minor stressors (Zoellner & Maercker, 2006).

Subjective experience of positive change as a result of struggling with trauma is named as posttraumatic growth. It is not only a recovery from trauma and turning back to prior functioning of the subject, but also further developments and changes.

In other words, PTG represents positive changes in lives of individuals compared to pre-trauma. Appreciation of life, setting new goals, enhanced personal strength, increase in interpersonal relationships and positive spiritual change are some of these positive changes. PTG is considered as a beneficial change in cognitive and emotional life that may also have behavioral implications. Moreover, it is claimed to be the antithesis of PTSD (Tedeschi et al., 1998).

Different terms are used to describe PTG such as benefit finding (Affleck & Tennen, 1996), stress-related growth (Park, Cohen, & Murch, 1996), positive adjustment (Lyons, 1991), positive adaptation (Linley, 2003), adversarial growth (Linley & Joseph, 2004), and thriving (O'Leary, Alday, & Ickovicks, 1998). In the literature, there are many studies indicating that different samples benefit from their traumatic events. Some of these individual groups include people suffering from heart disease (Sheikh, 2004), motor vehicle accident survivors (Zoellner, Rabe, Karl, & Maercker, 2008), war prisoners (Feder et al., 2008), rheumatoid arthritis patients (Dirik & Karancı, 2008), HIV infected people (Siegel, Schrimshaw, & Pretter, 2005), and cancer patients (Bozo, Gündoğdu, & Büyükaşık-Çolak, 2009, Urcuyo, Boyers, Carver, & Antoni, 2005). In short, PTG may be experienced by a wide range of people in a wide range of traumatic events.

1.2. Posttraumatic Growth in Cancer

Being diagnosed with chronic and terminal illnesses is considered as traumatic. Although cancer has been also considered as traumatic, it has been suggested that cancer is different from other acute traumatic events. According to the review of Sumalla, Ochoa, and Blanco (2009), cancer has a complex nature that

makes it difficult to identify the exact stressor producing traumatic response, because the stressor may be related to a set of negative circumstances such as diagnosis of cancer, severity and prognosis of the illness, aggressiveness of treatment, changes in body image, and decrease in functionality. In contrast to the external nature of other traumatic events, cancer is a traumatic event with internal source and genesis. Moreover, cancer related trauma is associated with future fears about health; and this fear usually focuses on what might happen in future. On the other hand, people who experienced other traumas focus on what happened in the past. Unlike other traumas, it is also difficult to establish onset and termination of the cancer as a traumatic event. Furthermore, there is a perceived control over the cancer that is related to treatment, follow-up, and preventive behaviors, while other acute traumas' nature is uncontrollable.

Similar to other terminal illnesses, cancer patients may also experience positive changes. For example, patients with cancer may question their values, worldviews, and priorities; and try to add meaning to their lives. Their negative experiences may produce more understanding and empathy to others experiencing similar problems. Individuals may also strengthen and increase their social networks and relationships due to their vulnerability, enhanced dependency, and increased need for support. In their support groups, they may also develop new relationships, learn different coping strategies and new information about their illness and treatment (Schaefer & Moos, 1998).

Many research findings manifested of the existence of PTG in cancer patients in their studies. For example, Barakat, Alderfer, and Kazak (2006) revealed that the majority of 150 adolescent cancer survivors report PTG. In another study, patients

with cancer showed moderate to high PTG (Schroevers & Teo, 2008). Moreover, cancer patients reported more benefits from their illness than lupus patients (Katz, Flasher, Cacciapaglia, & Nelson, 2001).

Similar findings were obtained in studies examining PTG in breast cancer patients. According to the study of Mols, Vingerhoets, Coebergh, and van de Poll-Franse (2009), 79% of the breast cancer survivors reported benefit finding. In the study of Cordova, Cunningham, Carlson, and Andrykowski (2001), women with breast cancer showed more PTG in specifically relating to others, appreciation of life, and spiritual change compared to healthy women. Similarly, it was found that breast cancer survivors report more PTG than control group (Tomich, Helgenson, & Vache, 2005). To sum up, although cancer might be different from other acute traumatic events, studies have showed that many cancer patients may experience PTG.

1.2.1. PTG among breast cancer patients

As mentioned above, many breast cancer patients report PTG after their traumatic experience, cancer diagnosis. In the literature, some variables have come into prominence in terms of their relationship with PTG. First of all, some demographic variables were found to be associated with growth. In the study of Urcuyo et al. (2005), it was found that ethnicity is correlated with PTG. According to the result of their study, Hispanic and African American reported more benefit finding compared to non-Hispanic White women. Education is another variable that has been suggested to be related to PTG. Although in some studies education was negatively related to PTG (e.g., Urcuyo et al., 2005), some other studies showed that

people with high education level show more PTG (e.g., Cordova et al., 2007). In addition to education and ethnicity, age has also been suggested to be related with PTG. According to Manne et al. (2004) and Cordova et al. (2007), young age was a predictor of growth. On the other hand, income was not related to PTG (Cordova et al., 2007).

In addition to some demographic variables, some medical variables were also associated with PTG. In the literature, stage of disease (Urcuyo et al., 2005) and use of anti-hormonal treatment (Urcuyo et al., 2005) were positively correlated with PTG. On the other hand, receipt of chemotherapy (Cordova et al., 2007), radiation therapy (Cordova et al., 2007), and hormonal therapy (Cordova et al., 2007); currently being on treatment (Cordova et al., 2007); time since surgery (Urcuyo et al., 2005), treatment (Cordova et al., 2007), and diagnosis (Cordova et al., 2007) were found to be unrelated to growth.

In addition to demographic and medical variables, some other factors have been examined in terms of their relationships with PTG. Social support (Bozo et al., 2009; Karancı & Erkam, 2007), optimism (Bozo et al., 2009; Büyükaşık-Çolak, Gündoğdu-Aktürk, & Bozo, in press; Urcuyo et al., 2005), coping strategies such as problem-focused coping (Büyükaşık-Çolak, et al., in press; Karancı & Erkam, 2007), emotion-focused coping (Büyükaşık-Çolak, et al., in press), active coping (Urcuyo et al., 2005), acceptance coping (Urcuyo et al., 2005), and substance use (inversely) (Urcuyo et al., 2005) are some of these factors that were found to be associated with the experience of PTG.

1.3. Types of Posttraumatic Growth Outcomes

It was suggested that posttraumatic growth has three different types of outcomes. People may experience positive changes in perception of self, interpersonal relationships, and philosophy of life as growth outcomes, but all of these outcomes may not exist together in the same person (Tedeschi et al., 1998). Change in perception of self is one of the growth outcomes. It is important to change the self-perception of a person who is the victim/survivor of a trauma. Moreover, individuals who perceive themselves as survivors of a trauma may develop a new sense that they are stronger and can handle anything (Tedeschi et al., 1998). Therefore, many trauma survivors reported an increase in the sense of self-image, self-reliance, or self-efficacy. In the study of Abraído-Lanza, Guier, and Colón (1998), it was found that thriving is related to both self-efficacy and self-esteem among Latinas with chronic illness including rheumatoid arthritis and lupus. Similarly, survivors faced with sexual assaults reported that they experience positive change in self from 2 weeks to 2 months after trauma (Frazier, Conlon, & Glaser, 2001). Furthermore, people who develop PTG tend to have increased awareness of vulnerability and mortality. Additionally, this combination of vulnerability awareness and sense of strength are suggested to lead people to seek social support (Tedeschi et al., 1998). In addition to changes in self-perception, positive changes in interpersonal relationships may also be experienced as a growth outcome. In the literature, some research findings showed that many individuals who experienced traumatic events strengthen their interpersonal relationships, disclose their feelings better, and express themselves more openly. For example, in the study of Laerum, Johnsen, Smith, and Larsen (1987), male myocardial infarction survivors reported

positive changes in love, care, and communication in family and spouse relationships following their disease. Moreover, awareness of vulnerability prompts empathy, compassion, and altruism in people. Sharing their experiences and knowledge with other people who experienced similar situations increases individuals' motivation. Furthermore, providing help to other people may also cause additional healing (Tedeschi et al., 1998). Positive change in philosophy of life is another outcome of growth. Traumatic events may make people have a sense that this is their second chance in life and they should be more careful. Therefore, they may experience alteration in their life philosophy and have a greater appreciation of life (Tedeschi et al., 1998). Correspondingly, in a study, breast cancer patients showed an appreciation of life after their traumatic experience (Cordova et al., 2001). Moreover, many traumatic events such as the loss of a loved one and facing with terminal illness may lead individuals to question existential themes and try to find the meaning of life. Murphy and Johnson (2003) indicated that 60 months after the death of their children, 57 % of parents find meaning in their experiences. Similarly, in the study of Manne et al. (2004), women with breast cancer reported that they seek for the meaning of their experiences and there was a significant relationship between searching for a meaning and posttraumatic growth. Furthermore, some individuals report spiritual changes after adversities. These changes may occur in their religious belief system or may be seen as an increase in their awareness of the spiritual elements in their lives (Kessler, 1987). In addition to other changes in philosophy of life after trauma, wisdom may also be experienced as a result of a struggle with trauma. Essentially, people experiencing other outcomes such as appreciation of life, ability to have strong relationships, developing coping strategies and sense of

spirituality are referred as wise. Briefly, positive changes after trauma may be seen in three different domains including self-perception, interpersonal relationships, and philosophy of life.

1.4. Models of Posttraumatic Growth as Outcome

1.4.1. Tedeschi and Calhoun's Conceptual Model of Posttraumatic Growth

Some researchers developed different models to explain relevant variables and determinants of posttraumatic growth. One of these models is the model of posttraumatic growth of Tedeschi and Calhoun (2004) (see Figure 1). This model claimed that growth is not a direct result of a trauma; however, it is a struggle with a new circumstance after a traumatic event. The event should have a 'seismic' effect and shake the individual's schematic structures that are sets of beliefs, goals, and assumptions about the world and set off the cognitive processing crucial for posttraumatic growth. According to Tedeschi and Calhoun (2004), different factors are influential on the development of posttraumatic growth. Firstly, some preexisting personal characteristics may affect the likelihood of PTG development positively. These individual characteristics include personality characteristics, ways of managing distressing emotions, and support and disclosure. To begin with, some personality factors such as extraversion and openness to experience are suggested to contribute to the occurrence of PTG. Similar to personality factors, managing with initial stress is also important, because it leads to cognitive processing and schema change that are necessary for the development of growth (Tedeschi & Calhoun, 2004). In the early stages of struggling with trauma, cognitive processing occurs automatically. Moreover, individual may experience frequent intrusive thoughts and

images, and negative intrusive ruminations in these early stages of trauma response. This process provokes the need of change in preexisting goals and assumptions, because these goals and assumptions are not appropriate for the new circumstances after the trauma. This process may be lengthy, because the loss after trauma is accepted gradually. Support from others is also important for the development of posttraumatic growth, since other people 'provide a way to craft narratives about change' and offer perspectives that may be useful for schema change. Moreover, it provides intimacy and empathetic acceptance of disclosure by sharing their experience and being member of a group that consists of people who experienced similar circumstances.

After the first cognitive processing, a process to return thoughts of trauma and related issues, named as rumination, become more deliberate than automatic (Tedeschi & Calhoun, 2004). It causes the person to recognize the difference between schemas and events, to challenge the higher order goals and beliefs, to disengage from unattainable goals, and it allows the person to construct new goals. In addition to changes in beliefs and goals, posttraumatic growth also includes development of the wisdom and life narratives. Moreover, some distress is necessary for the enhancement and the maintenance of growth. As a result of this process, posttraumatic growth may be experienced in five different domains of change that are also factors of PTG Inventory (Tedeschi & Calhoun, 1996). These domains are relating to others, new possibilities, personal strength, spiritual change, and appreciation of life (Calhoun & Tedeschi, 1996).

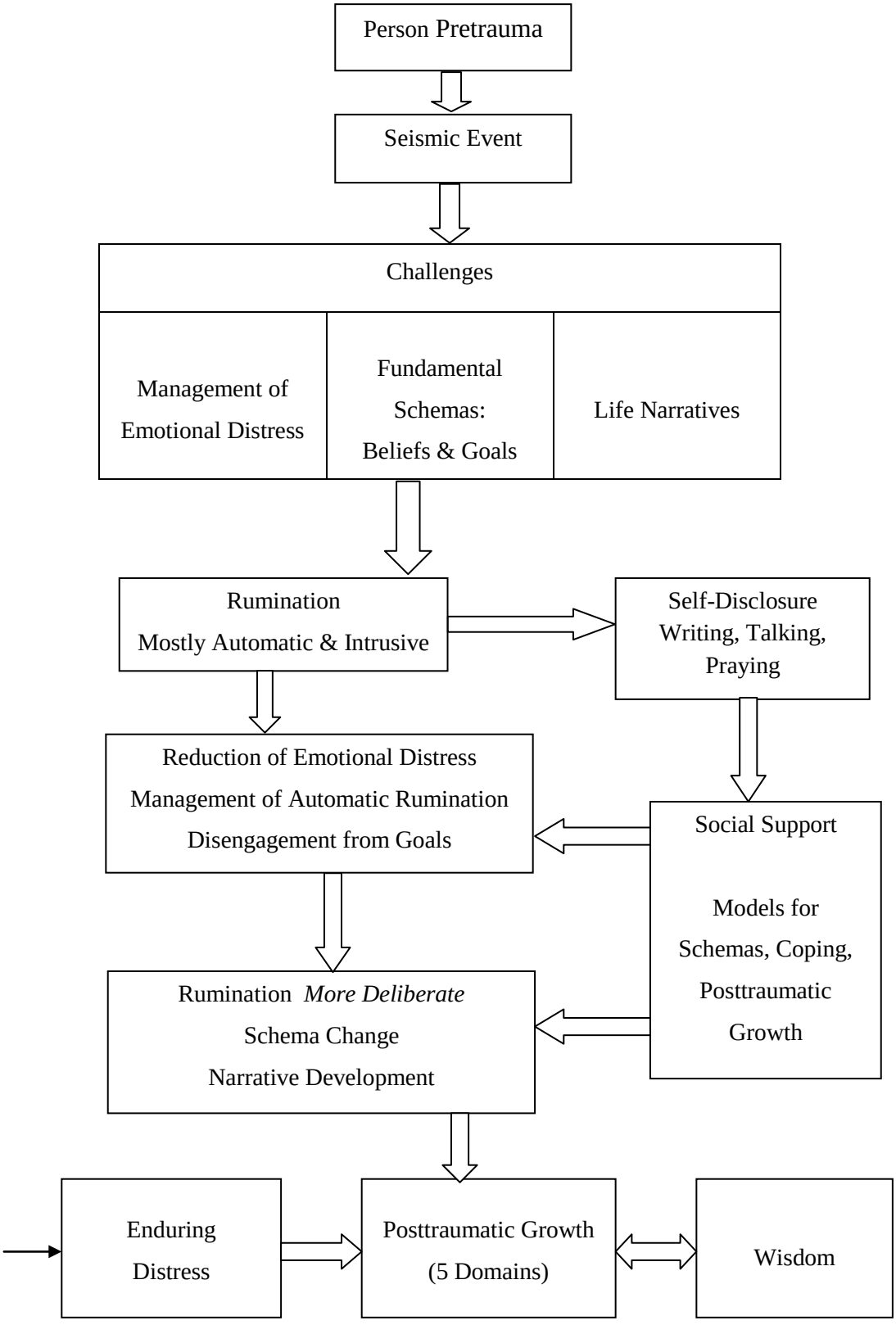


Figure 1. Posttraumatic Growth model of Tedeschi and Calhoun (2004)

1.4.2. The Life Crises and Personal Growth Model of Schaefer & Moos

The Life Crisis and Personal Growth model of Schaefer and Moos (1992) is another model that illustrates mechanism of posttraumatic growth. According to this conceptual model, environmental and personal system factors of an individual determine the likelihood and the characteristics of a life crisis and its transition that a trauma survivor will pass through. They affect cognitive appraisal and coping responses of the individual and promote the development of personal growth (see Figure 2). This model has a vicious cycle, thus all components influence one another. The first component of this model is environmental system factors. Environmental system factors include life transitions, financial conditions, personal relationships, social support from family, social environment, community resources, new life events, and other aspects of living conditions. These environmental resources may contribute to the development of effective coping styles and the evaluation of the event in a more positive way. Consequently, environmental resources may be determinant of personal growth by enhancing coping behavior and adaptation to crises. For instance, a positive family environment or community resources such as self-help groups may be helpful for adaptation to traumatic events (Schaefer & Moos, 1992; Schaefer & Moos, 1998).

Personal system factors, the second component of the model, comprises demographic characteristics such as age and gender, and personal resources such as self-confidence, self-efficacy, motivation, health status, and prior crisis experience (Schaefer & Moos, 1992; Schaefer & Moos, 1998). Demographic characteristics are related with more personal and social resources such as marital and educational status; and these characteristics are associated with outcomes after a crisis. There are

some research findings indicating a positive relationship between some demographic variables and positive outcomes after trauma. For instance, women are generally found to report more growth compared to men (Park et al., 1996; Weiss, 2002). Additionally, education level is negatively associated with benefit-finding (Urcuyo et al., 2005). The findings in literature about age-PTG relationship are less consistent. However, Lechner et al. (2003) indicated that younger cancer patients report more benefit-finding. Moreover, personal resources such as optimism, resilience, self-confidence, and prior crisis experience may increase coping resources and influence recovery from a crisis (Schaefer & Moos, 1992; Schaefer & Moos, 1998).

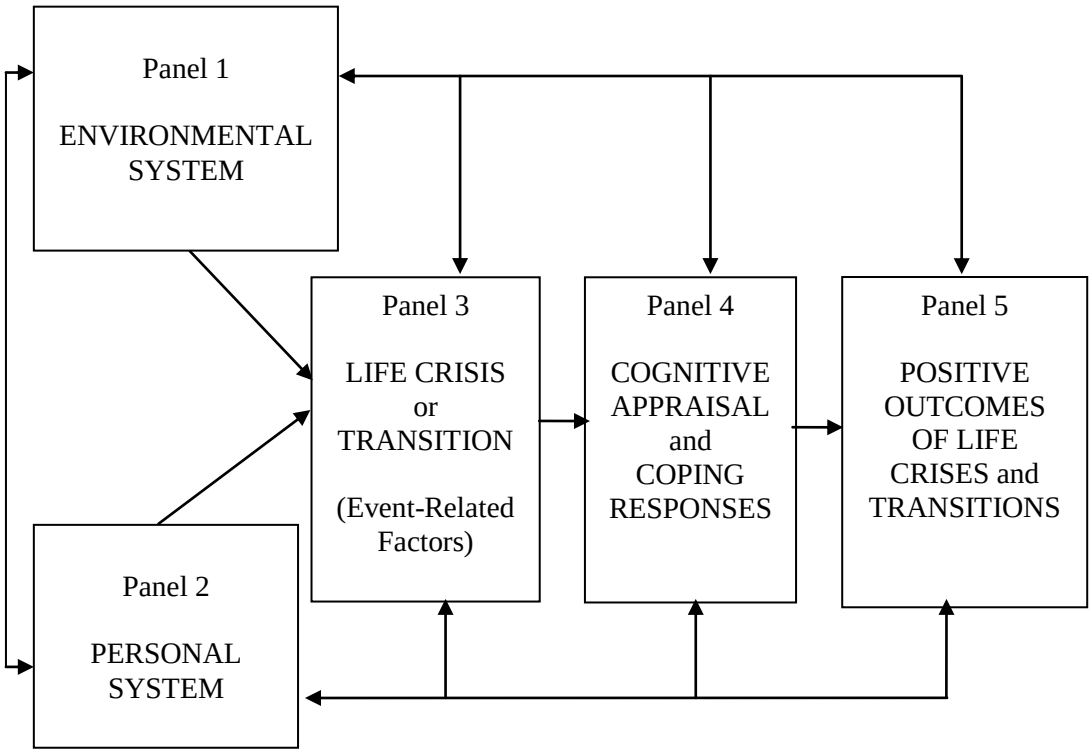


Figure 2. A Conceptual Model for Understanding Positive Outcome of Life Crises and Transitions (Schaefer & Moos, 1992, p. 152)

As mentioned above, these environmental and personal system factors affect the experience of life crises and its transition that are called event-related factors. These event-related factors consist of severity, duration, timing, predictability, suddenness of onset and scope of the event and proximity of the individual, the extent of loss, exposure to the individual and controllability. These factors reflect the changes in personal system factors such as injury or illness or environmental system factors such as the death of a spouse (Schaefer & Moos, 1992; Schaefer & Moos, 1998).

Cognitive appraisal and coping responses are also components of the model contributing the development of positive outcomes. According to this model, cognitive appraisal represents interpretation and perception of the threatening event. For instance, causal attribution is an aspect of the cognitive appraisal. In addition to cognitive appraisal, coping responses also influence the development of personal growth. Cognitive coping strategies may enable people to focus on the benefits of a traumatic event by finding meaning in the event and gaining a sense of control. It is stated that individuals using active and problem-focused coping strategies may experience better adaptation and positive outcomes compared to the ones using avoidance coping (Schaefer & Moos, 1992; Schaefer & Moos, 1998). This relation between active coping and benefit finding or posttraumatic growth was revealed in different studies including men treated for prostate cancer (Kinsinger et al., 2006) and head and neck cancer survivors (Harrington, McGurk, & Llewellyn, 2008).

The Life Crises and Personal Growth Model of Schaefer and Moos (1992) claimed that three different positive outcomes may occur after the crisis. To start with, individual may experience enhanced social support such as better interpersonal

relationship with family and friends and more supportive networks. Secondly, enhanced personal resources (e.g., more assertiveness, empathy, maturity and altruism) may emerge after the traumatic experience. Lastly, trauma survivors may develop enhanced coping skills such as logical thinking about problems, seeking help, and regulating affect. Consequently, there are different models to explain the development of posttraumatic growth and related factors.

1.5. Posttraumatic Growth: Reality or Illusion?

Different theoretical models have accounted for mechanisms of posttraumatic growth and there are conflicting ideas about it. While some researchers indicate models suggesting posttraumatic growth as a 'real' phenomenon, other models claim that it is an illusion to reduce distress. The models proposing PTG as a real phenomenon indicate that accommodation process causes positive identity of change (Sumalla, Ochoa, & Blanco, 2009). For instance, the model of Tedeschi and Calhoun (2004) regards growth as a real phenomenon and claimed that rumination provokes reconstruction of preexisting schemas and beliefs and lead the person to develop new structures.

In contrast to the model of Tedeschi and Calhoun (2004), some other models suggest PTG as being an illusion. According to these models, posttraumatic growth is a coping strategy and individuals assimilate traumatic experiences in a positive way to maintain their coherence, sense and self-esteem of the identity. In this way, this strategy defends individuals from distress produced by traumatic event and so, they maintain their identity (Sumalla, Ochoa, & Blanco, 2009). Cognitive Adaptation Theory of Taylor (1983) is one of the models that proposed growth as an illusory

phenomenon. This theory indicates that after a personally threatening event, readjustment process focuses on three main issues: search for meaning in the adverse experience, attempt to keep control over the event, and an effort to enhance self-esteem and the sense of value. Searching for meaning includes the need for understanding why the event occurs and what the implications are for current life. The second main issue, attempt to keep control over the experience, implicates gaining mastery and control over the event in order to prevent reoccurrence. And the third issue is the effort to enhance the 'self' and repair self-esteem. According to Taylor (1983), these three main issues are substantially found in illusions, because individual experiencing a threatened event such as cancer adopts this distorting process as a defense. Moreover, these illusions are useful to reach psychological adaptation by prompting constructive thoughts and actions.

Discretely, there is a third kind of model accepting growth as a two-component concept including both constructive (self-transcending) and illusory (self-deceptive) sides. This model is "Janus Face Model of Self-Perceived Growth (Maercker & Zoellner, 2004). The name of the model is inspired from a Roman God Janus (Janus Genimus) that has two faces looking at the opposite ways. According to this model, while constructive side may be related to functional cognitive restructuring like the model of Tedeschi and Calhoun (2004), illusory side may be related to denial, avoidance, wishful thinking, distortion of meaning and palliation. It is suggested that threat perception triggers illusory side and it is used as an acute palliative coping strategy (Maercker & Zoellner, 2004). Some people experience the illusory component as a denial process, too. Additionally, when growth is simply illusory and in the use of cognitive avoidance strategy, then this situation would have

a deteriorating effect on adjustment. On the other hand, constructive side is assumed to be linked with both adjustment and well-being in the short and long term. Moreover, it is claimed that the constructive side is related to active struggling with trauma and active coping strategies. In successful coping, constructive component is suggested to improve in course of time, while illusory component is suggested to decline in the process of time.

Maercker and Zoellner (2004) introduced two features of self-perceived growth: optimism and openness. Optimism, representing illusory side of growth, is described as disposition to expect positive outcomes in life (Urcuyo et al., 2005). It is suggested that people with high dispositional optimism use more positive illusions compared to people with low optimism (Maercker & Zoellner, 2004). On the other hand, openness to experience, representing constructive side of growth, is described as strong imagination, emotionally responsiveness, curiosity and interest in new situations, ideas and experiences (Maercker & Zoellner, 2004; Zoellner & Maercker, 2006). It is assumed that people high on openness to experience handle traumatic events better, are less afraid of emotional turmoil, and show more tolerance. For this reason, they are more prone to think about traumatic event and it leads them to make more schema and narrative change that provoke growth.

1.6. Factors Associated with Posttraumatic Growth

1.6.1. Personality

In spite of the discussions about the reality of posttraumatic growth, the factors related to posttraumatic growth have been examined widely in the literature. Personality is one of the variables that has been examined with its relation to

posttraumatic growth. Personality traits are important factors, because they determine how individuals will adapt to stressful events and how they will recover from these events (Watson & Hubbard, 1996). In the literature, researchers have found a link between PTG and some personality traits such as affective personality (Norlander, Von Schedvin, & Archer, 2005), dispositional optimism (Bozo, Gündoğdu, & Büyükaşık-Çolak, 2009), dispositional hope (Yola, 2011), hardiness (Waysman, Schwarzwald, & Solomon, 2001), the sense of coherence (Znoj, 1999), and Big Five dimensions of personality (Tedeschi & Calhoun, 1996).

Big Five constellation consists of agreeableness, conscientiousness, neuroticism, extraversion and openness to experience expressing different types of personality (McCrae & John, 1992). Agreeableness dimension of personality represents the characteristics of trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness. People with agreeableness are assumed to be appreciative, skeptical, giving, sympathetic, considerate, warm, kind and trustful (McCrae & John, 1992). According to Tashiro and Frazier (2003), because people high on this personality trait are more likely to be warm, pleasant, kind, and cooperative; they may experience positive changes in their interpersonal relationships with friends and family after the adverse events. As far as known, there is a limited publication examining relationship between PTG and agreeableness. However, these publications testified an association between these two variables. In the study of Tedeschi and Calhoun (1996), it was found that agreeableness is significantly correlated with PTG in regard to "Big Five" constellation. Moreover, agreeableness was also significantly associated with 'relating to others' factor of posttraumatic growth. Similarly, agreeableness was stated as the only Big Five

personality trait related to higher levels of PTG among university students that experienced romantic relationship breakups (Tashiro & Frazier, 2003). On the other hand, there are also studies indicating no relationship between agreeableness and PTG. For example, Sheikh (2004) failed to find a significant correlation between these two variables among people with heart disease (Sheikh, 2004).

Conscientiousness is also one of the Big Five constellations of personality. This personality trait is related to competence, order, dutifulness, achievement striving, self-discipline, and deliberation characteristics. People high on conscientiousness tend to be dependable, responsible, efficient, productive, organized, planful, able to delay gratification, reliable, responsible, and ethical (McCrae & John, 1992). Tedeschi and Calhoun (1996) reported a significant relationship between this personality trait and PTG. Furthermore, conscientiousness was also correlated with personal strength factor of posttraumatic growth. On the other hand, there were also findings that state no relationship between conscientiousness and benefit-finding after adverse events. For instance, conscientiousness dimension of personality was not associated with growth among people who experienced romantic relationship breakups and who are heart disease patients (Sheikh, 2004; Tashiro & Frazier, 2003).

Neuroticism, another Big Five personality trait, represents anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability. People high on this trait are more likely to be anxious, thin-skinned, self-pitying, brittle ego defensive, tense, self-defeating, touchy, unstable, and have fluctuating moods (McCrae & John, 1992). In the literature, neuroticism is suggested to be unrelated to posttraumatic growth. In their study, Tedeschi and Calhoun (1996) reported that there is no relation

between neuroticism and PTG among university students. Similar findings were also attained among people who experienced breakups (Tashiro & Frazier, 2003), who have cancer (Lechner et al., 2003), and heart disease patients (Sheikh, 2004).

Extraversion is also a Big Five personality trait representing warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotions. People high on this trait tend to be active, talkative, assertive, humorous, cheerful, energetic, enthusiastic, expressive, outgoing, and seeker for social contact (Affleck & Tennen, 1996; McCrae & John, 1992). Individuals high on extraversion were acknowledged to be more likely to have positive outcomes of adverse events for social relationships (Affleck & Tennen, 1996). In the study of Tedeschi and Calhoun (1996), extraversion was found to be related with PTG and it was also correlated with all 5 factors of PTG, namely, 'relating to others', 'new possibilities', 'personal strength', 'spiritual change', and 'appreciation of life'. Similarly, Sheikh (2004) claimed that this personality trait is the only personality variable that predicts PTG in terms of Big Five constellation. In contrast to these publications, Tashiro and Frazier (2003) failed to find a significant relationship between extraversion and posttraumatic growth after adversity of relationship breakups.

Openness to new experiences is also among the Big Five personality traits studied in relation with PTG. Openness to experience type of personality represents dimensions of fantasy, aesthetics, feelings, actions, ideas, and values. People high on this trait tend to be artistic, intellectually curious, introspective, imaginative, emotionally responsive, insightful, and they have unusual thought processes and judges in unconventional terms (Affleck & Tennen, 1996; McCrae & John, 1992). According to Maercker and Zoellner (2004), openness to experience may play an

important role for adaptation to stressful situation and it represents the constructive side of posttraumatic growth. Individuals with this personality trait may be more likely to respond to an adversity with a new philosophical orientation and life plans (Affleck & Tennen, 1996). In some studies, this personality trait was related to benefit-finding after trauma. For example, Tedeschi and Calhoun (1996) reported that openness to experience is significantly correlated with PTG and it is also related with 'new possibilities' and 'personal strength' factors of growth. On the contrary, there are some research findings indicating no relationship between openness to experience and PTG (e.g. Knaevelsrud, Liedl, & Maercker, 2010; Sheikh, 2004; Tashiro & Frazier, 2003). Similarly, Zoellner et al. (2008) stated that openness is not significantly correlated with PTG among motor vehicle accident survivors. However, Zoellner and her colleagues (2008) found that PTG is predicted by higher openness to new ideas, one of the facets of openness to experience, in accident survivors with low distress. Eventually, although there are conflicting findings about the relationship between PTG and "Big Five" dimensions of personality, findings showed that people with some personality traits may be more likely to develop PTG.

Personality traits may also affect how people respond to the traumatic event by determining coping strategy. Some research findings in the literature indicated that different types of personality traits lead to different types of coping styles. First of all, neuroticism type of personality was found to be related to inefficient and passive types of coping. People with high neuroticism tend to use 'behavioral disengagement' coping by giving up reaching their aims, 'mental disengagement' such as daydreaming and dealing with other activities to forget their problems, 'focusing on and venting emotions', 'seeking emotional social support' by

expressing their feelings openly, and ‘denial’ by pretending that the problems are not substantial. Moreover, they reported that they typically do not respond to stress by using ‘acceptance’ such as accepting the facts about what has happened or ‘positive reinterpretation and growth’ coping strategy such as learning useful information from experience (Watson & Hubbard, 1996). Similarly, in their study McCrae and Costa (1986) found that neuroticism is related with ineffective coping styles such as hostile reaction, escapist fantasy, self-blame, sedation, withdrawal, wishful thinking, passivity, and indecisiveness. Moreover, researchers claimed that people with low neuroticism tend to “draw strength from adversity” as a coping style (McCrae & Costa, 1986). In contrast to neuroticism, conscientiousness personality trait was related to active and problem-focused coping. Individual high on conscientiousness reported that they use ‘planning’ strategy such as devising careful strategy, ‘active coping’ by eliminating problems they face, and ‘suppression of competing activities’ by focusing more fully on the problem solving task. Besides, they tend not to give up reaching their goals (behavioral disengagement) and not turn to activities such as alcohol, drugs and other divert actions to forget their problems (alcohol-drug disengagement, mental disengagement) (Watson & Hubbard, 1996).

Besides neuroticism and conscientiousness, extraversion was also found to be related to coping. According to McCrae and Costa (1986), this personality trait is associated with rational action, positive thinking, substitution, and restraint. Furthermore, people high on extraversion were found to be interpersonally oriented and use seeking social support as a response to stress. In addition, they tend to use ‘positive reinterpretation and growth’ coping by seeking something good and positive in their experiences (Watson & Hubbard, 1996). It is claimed that people

high on extraversion “draw strength from adversity” as a coping style (McCrae & Costa, 1986). People with high openness to experience, another personality trait, are more likely to ‘turn religion’, ‘planning’ by thinking how to handle stress, and ‘positive reinterpretation’ (Watson & Hubbard, 1996). Individuals high on openness to experience tend to use humor to deal with stress, while closed individuals tend to use faith. It is also suggested that people with high openness to experience “draw strength from adversity” as a coping style (McCrae & Costa, 1986). Lastly, people high on agreeableness were found to be more likely to use ‘positive reinterpretation and growth’, ‘planning’ and ‘alcohol-drug disengagement’ (Watson & Hubbard, 1996). In brief, the relationship between posttraumatic growth and personality might be emerged through coping strategies used by individuals.

1.6.2. Locus of Control (LOC)

In addition to personality traits, habitual cognitive processing styles have also been studied in relation to PTG. It is claimed that people differ in their habitual cognitive processing styles and these cognitive processing styles are not as stable as personality traits (Zoellner & Maercker, 2006). Locus of control (LOC) is one of these habitual cognitive processing styles. It is defined as the extent to which individuals feel that they can control events. There are two orientations for locus of control. In the first one, people may believe that outcome of their behavior is related to their own behavior and personal characteristics. This locus of control is named as internal locus of control or internal control of reinforcement. In internal locus of control, the belief that individuals may influence outcome of their behavior and control their lives is prevalent (Cummings & Swickert, 2010; Rotter, 1966, cited in

Rotter, 1990). People with high internal locus of control are more likely to be interested in their well-being and more health-focused and prepared to deal with negative life events (Lefcourt, 1980; cited in Cummings & Swickert, 2010). On the other hand, individuals may expect that the outcome of their behavior is related to chance, fate or luck, and is the under control of powerful others, or is unpredictable. This orientation is called external locus of control or external control of reinforcement. In external locus of control, individuals may not control their outcomes and they attribute the outcomes to other factors (Cummings & Swickert, 2010; Rotter, 1966, cited in Rotter, 1990). Zoellner and Maercker (2006) assumed that there is a positive relationship between internal LOC and PTG. However, this relationship is assumed to indicate the illusory side of PTG. This relationship may be an evidence for potentially illusory side of PTG because of minimal controllability of traumatic events.

In the relevant literature, there is some evidence that controllability has an association with posttraumatic growth. For instance, in the study of Park et al. (1996), it was found that stress-related growth is positively associated with perceived controllability of the event among college students. Moreover, perceived control was related to benefit finding, and enhancement in perceived control was associated with an increase in positive life changes in sexual assault survivors (Frazier, Tashiro, Berman, Steger, & Long, 2004). Similar results were found in patients with illnesses such as rheumatoid arthritis (Tennen, Affleck, Urrows, Higgins, & Mendola, 1992). According to the results of another study, higher levels of perceived control over health were significantly associated with higher levels of growth (Siegel et al., 2005). On the other hand, there are some research results indicating no relationship between

controllability and PTG. For example, although Park et al. (1996) found a significant relationship between controllability of the event's occurrence and stress-related growth in their study, they failed to replicate this result in another study. Similarly, Kilmer and Gil-Rivas (2010) indicated that there is no significant relationship between PTG and realistic control that is accurate and age-appropriate perceptions of event among children affected by Hurricane Katrina. In a parallel manner, after controls imposed for affect, reappraisal, and demographic variables perceived control over health was not significantly related to growth (Siegel et al., 2005). Briefly, there are conflicting findings about the relationship between controllability of an event and PTG.

In addition to perceived controllability, relationship between locus of control and PTG has also been indicated by researchers. In the literature, internal locus of control has been predominantly suggested to be related to posttraumatic growth. Several studies have been conducted to explain this relationship. Zoellner and Maercker (2006) claimed that internal locus of control represents potentially functional as well as illusory component of posttraumatic growth. According to Tedeschi and Calhoun (1995), since people with internal locus of control perceive a strong contingency between their behaviors and outcomes, this orientation may give these people a sense of control in negative circumstances, and they may act in order to affect and change the outcomes. This sense of control may lead individuals to use problem-focused coping and endeavor to solve circumstances that have been probably underlying posttraumatic growth. However, there is limited research that examined the association between locus of control and PTG. In one of these studies, Maercker and Herrie (2003) found that internal locus of control is significantly

correlated with personal growth, while external and fatalistic locus of control is correlated with posttraumatic stress disorder (PTSD) symptoms. On the other hand, in another study locus of control was not significantly correlated with growth (Cummings & Swickert, 2010). Thus, there are conflicting findings about the PTG—locus of control relation.

Similar to personality traits, locus of control may also be influential for posttraumatic growth by determining coping strategy toward traumatic event. People with internal locus of control may use problem-focused coping, because they see a strong contingencies between their behaviors and outcomes (Parkes, 1984). Similarly, Parkes (1984) found that people with internal locus of control use more adaptive coping strategies. In the literature, some studies have examined locus of control- coping relationship. Petrosky and Birkimer (1991) claimed that internal locus of control is correlated with the use of direct coping. In the study of Arslan, Dilmaç, and Hamarta (2009), university students with internal locus of control showed higher problem-focused coping compared to students with external locus of control. However, some researchers failed to find significant association between internal locus of control and coping strategies (Brown, Mulhern, & Joseph, 2002; Scott et al., 2010). On the other hand, it was found that external locus of control is related to avoidance coping and not related to both problem-focused and emotion-focused coping among hurricane survivors (Scott et al., 2010) and firefighters (Brown, Mulhern, & Joseph, 2002). On the contrary, Butler-Sweeney (2007) found that external locus of control is correlated with a reduction in use of problem-focused coping strategies. This influence of locus of control on coping styles may lead to the development of positive change after trauma.

1.6.3. Coping

Coping has also been suggested to be one of the important determinants of stress-related growth. The term "coping" term is defined as cognitive and behavioral attempts to deal with internal or external demands and conflicts (Folkman & Lazarus, 1980). It is acknowledged that using adequate and adaptive coping strategies produces growth (Armeli, Gunthert, & Cohen, 2001). It was found that there is a relationship between posttraumatic growth and different coping strategies such as positive reinterpretation (reframing/reappraisal) (e.g., Park et al., 1996; Schroevers & Teo, 2008; Siegel et al., 2005; Thornton & Perez, 2006; Urcuyo et al., 2005), religious coping (e.g. Koenig, Pargament, & Nielsen, 1998; Park et al., 1996; Urcuyo et al., 2005), acceptance coping (e.g. Park et al., 1996; Schulz & Mohammed, 2004; Urcuyo et al., 2005), substance use coping (e.g. Urcuyo et al., 2005), emotional social support coping (e.g. Park et al., 1996), instrumental support (e.g. Schroevers & Teo, 2008), avoidance coping (e.g. Widows, Jacobsen, Booth-Jones, & Fields, 2005), active coping (e.g. Collins, Taylor, & Skokan, 1990; Urcuyo et al., 2005), and problem-focused coping (e.g., Dirik & Karancı, 2008; Sheikh, 2004).

Problem- focused coping is one of these coping strategies that were found to be related to posttraumatic growth. Problem-focused coping strategies involve attending to problems directly and altering the actual person-situation relationship (Dirik & Karancı, 2008). Seeking for information, attempt to get help, inhibiting action and taking direct action are some of the problem-focused coping strategies (Folkman & Lazarus, 1980). Problem-focused coping is asserted to provoke growth, because active involvement in problem may lead the person to have enhancement in self-efficacy and self-confidence that may result in growth. Furthermore, it was

suggested to overlap with the structure of PTG, because problem-focused coping includes new perspective, maturity, and positive reinterpretation (Kesimci, Göral, & Gençöz, 2003). There is also some evidence to support the relationship between posttraumatic growth and problem-focused coping strategies in the literature. The use of problem solving strategies and problem-focused coping were found to be positively related to PTG (Kesimci et al., 2005; Widows, 2005). Similarly, Armeli et al. (2001) stated that individuals using coping strategies that include high levels of problem-focused coping (e.g. active coping, suppression of competing activities, restraint, and seeking of instrumental support) experience more growth. Moreover, Büyükaşık-Çolak et al. (in press) found that breast cancer patients with high problem-focused coping strategies were more likely to be high on PTG. There are also many research findings indicating a positive relationship between PTG and problem-focused coping among undergraduate university students (Göral, Kesimci, & Gençöz, 2006), rheumatoid arthritis patients (Dirik & Karancı, 2008), people with heart disease (Sheikh, 2004), myocardial infarction patients (Şenol-Durak & Ayvaşık, 2010), earthquake survivors (Karancı & Acartürk, 2005), and cancer patients (Collins et al., 1990) as well as breast cancer patients (Karancı & Erkam, 2007).

Furthermore, there is also some evidence for the positive relation between posttraumatic growth and emotion-focused coping. Emotion-focused coping is described as behavioral and cognitive attempts to decrease or manage emotional distress (Folkman & Lazarus, 1980). Avoidance, detachment, assignment of blame, projection, fantasy and attempt to see humor in the situation are the examples of emotion-focused coping strategies (Folkman & Lazarus, 1980). Some research

findings that supported emotion-focused coping and PTG relationship are as follows. Göral et al. (2006) ascertained that emotion-focused coping is associated with stress-related growth in Turkish university students. In another study, Şenol-Durak and Ayvaşık (2010) found that posttraumatic growth is positively correlated with emotion-focused coping among myocardial infarction patients. Similarly, it is acknowledged that there is a positive relationship between posttraumatic growth and emotion-focused coping in patients with heart disease (Sheikh, 2004). Moreover, it was found that breast cancer patients high on emotion-focused coping were more likely to have high scores on PTG (Büyükaşık-Çolak et al., in press). Thus, similar to problem-focused coping, emotion-focused coping was also found to be related to PTG.

In addition to problem-focused and emotion-focused coping, fatalistic coping has also been suggested to be related to stress-related growth. According to Karancı and Acarturk (2005), fatalistic coping that includes religious beliefs, believing in fate, and hoping help from God may help people to accept negative situation and give rise to growth. Therefore, it is different from helplessness coping and may induce the people to think that they need to accept the situation and take all required actions. Moreover, it may result in regulating intense emotions, attempting to engage in active problem solving, and enhancing the use of problem-focused coping. In some studies, greater use of fatalistic coping was found to be associated with greater PTG (Karancı & Acartürk, 2005; Kesimci et al., 2005). In brief, although there are conflicting findings in the literature, research results showed that coping has a considerable role in the posttraumatic growth.

In addition to its direct relationship with growth, it has been suggested that coping has also a mediator role between PTG and different variables. For example, Şenol-Durak and Ayvaşık (2010) indicated that coping has a mediator role between perceived social support and PTG. Similarly, another study showed that problem-focused coping is partially mediated the relationship between extraversion and PTG (Sheikh, 2004). Moreover, it was found that problem-focused coping has a mediator role between dispositional optimism and PTG (Büyükaşık-Çolak et al., in press). Consequently, besides its main effect, coping has been studied as a mediator variable, too.

1.7. Posttraumatic Growth Studies in Turkey

Culture plays an important role in struggling with stress by influencing the environmental and personal systems of the individual, life conditions, perception of stressful events, and coping styles (Chun, Moos, & Cronkite, 2006). It has been suggested that some factors and processes that emerge from cultural elements influence the behaviors of people, especially after traumatic experience (Calhoun, Cann, & Tedeschi, 2010). According to Weiss and Berger (2010), posttraumatic growth has two sides, namely, universal and culture specific. First of all, posttraumatic growth shows the universality of experience and similar correlates around the globe. However, it does also have different manifestations and correlates that are unique to cultures. Therefore, culture-specific studies became more prominent in the literature.

Studies conducted about PTG in Turkey have focused on patients or survivors of severe illnesses such as myocardial infarction patients (Şenol-Durak & Ayvaşık,

2010), rheumatoid arthritis patients (Dirik & Karancı, 2008), breast cancer patients (Bozo et al., 2009; Karanci & Erkam, 2007); caregivers such as parents of children with autism (Elçi, 2004); accident survivors such as motor vehicle accident survivors (Birol, 2004); earthquake survivors such as 1999 Marmara earthquake (Karancı & Acartürk, 2005; Tanrıdağlı, 2005), and healthy adult students (Göral et al., 2006; Kesimci et al.2005).

In Turkish literature, different variables have been found to be associated with posttraumatic growth. Some demographic characteristics were found to be related to growth. For example, the income level of Turkish breast cancer patients was negatively correlated with stress-related growth (Karancı & Erkam, 2007). Moreover, compared to men, women were more likely to develop posttraumatic growth (Kesimci et al., 2005; Şenol-Durak & Ayvaşık, 2010). In addition to demographic characteristics, some factors about the event and the perception of the event and its relationship with PTG have also been examined. Perceived severity of impact, perceived life threat, and stressfulness of the event are some of these factors that are related to growth positively (Birol, 2004; Karancı & Acartürk 2005; Kesimci et al., 2005).

Social support has been widely suggested to be related to growth in Turkish literature. According to research findings, both perceived social support (Bozo et al., 2009; Dirik & Karancı, 2008; Elçi, 2004; Karancı & Acartürk, 2005; Karancı & Erkam, 2007) and its different aspects such as support from friends (Bozo et al., 2009; Şenol-Durak & Ayvaşık, 2010), family (Bozo et al., 2009), and significant others (Bozo et al., 2009; Şenol-Durak & Ayvaşık, 2010) were positively associated with PTG.

Additionally, coping strategies have been widely examined in terms of their relationship with PTG. There are conflicting findings about coping-PTG relationship in Turkish literature. Problem-focused coping was found to be positively associated with PTG in general (Birol, 2004; Dirik & Karancı, 2008; Elçi, 2004; Göral et al., 2006; Karancı & Acartürk, 2005; Karancı & Erkam, 2007; Kesimci et al., 2005; Şenol-Durak & Ayvaşık, 2010; Tanrıdağlı, 2005;). In addition to problem-focused coping, posttraumatic growth was asserted to be related to emotion-focused coping (Göral et al., 2006; Şenol-Durak & Ayvaşık, 2010) as well as fatalistic coping (Birol, 2004; Karancı & Acartürk, 2005; Kesimci et al., 2005; Tanrıdağlı, 2005). Consequentially, culture may influence the factors related to posttraumatic growth. In addition, some traumatic events, coping strategies, and social support come into prominence in terms of relationship with growth in Turkish culture and literature.

1.8. The Aim of the Present Study

In the light of these studies, this study proposes a mediation model of posttraumatic growth in breast cancer survivors. The aim of the present study is to investigate the relationship of posttraumatic growth with personality traits and habitual cognitive processing styles (i.e. locus of control), and the mediator role of coping styles on these relationships (see Figure 3). The hypotheses of the study are: (1a) breast cancer patients high on extraversion dimension of Big Five Personality Scale would be more likely to develop PTG, (1b) breast cancer patients high on openness to experience dimension of Big Five Personality Scale would be more likely to develop PTG, (2) breast cancer patients with internal locus of control would be more likely to develop PTG, (3a) problem-focused coping would mediate the

relationship between extraversion and PTG, (3b) problem-focused coping would mediate the relationship between openness to experience and PTG, (4) problem-focused coping would mediate the relationship between internal locus of control and PTG.

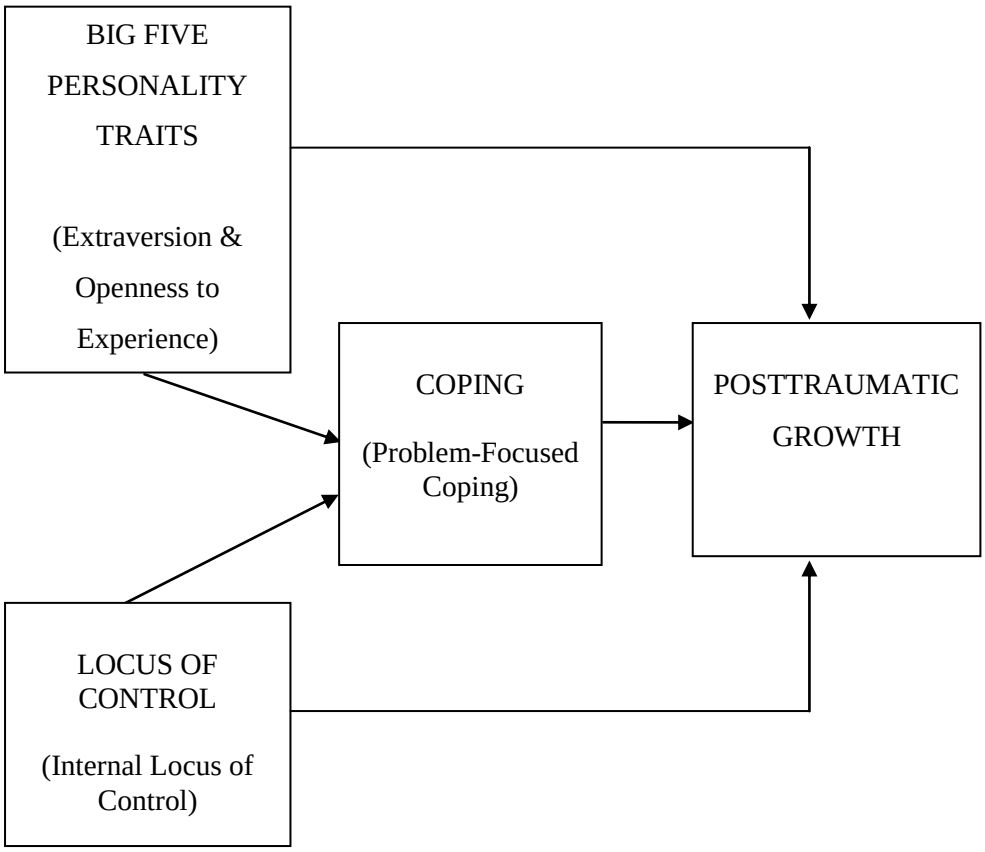


Figure 3. The proposed model of the current study

CHAPTER 2

METHOD

2.1. Participants

One hundred and fourteen women with breast cancer undergoing chemotherapy/radiotherapy treatment or come to the hospital for post-operational follow-up appointments were recruited for the present study. The age of the participants ranged between 28 and 65 (M = 46.25, SD = 6.80). Education was categorized into three groups as no education/primary school, high school, and university and above. The education level of the participants as follows: 59.6% no education/primary school (n = 68), 21.9 % high school (n = 25), and 15.8 % university and above (n = 18). In terms of marital status, the participants were grouped as married (82.5 %, n = 94) and single/divorced/widow (17.5 %, n = 20) patients. In terms of occupation, 82.5 % of the participants reported that they do not have a job currently (n = 94), while 16.7 % of them reported that they have a job (n = 19). In terms of the place that the individuals have spent most of their lives, 50 % of the participants reported that they lived in a metropolitan (n = 57), 37.7 % in a city (n = 43), and 12.3 % in a town/village (n = 14). While 73.7 % of the participants reported themselves as belonging to the middle income status (n = 84), 18.4 % had

low income status (*n* = 21), and 3.5 % had high income status (*n* = 4). Time since diagnosis ranged between 2.5 and 18 months (*M* = 6.85, *SD* = 3.24). The existing disease stages of the participant in their diagnosis were as follows: first stage (26.3 %, *n* = 30), second stage (29.8 %, *n* = 34), third stage (23.7 %, *n* = 27), and fourth stage (1.8 %, *n* = 2). The participants who underwent treatment consisted 92.1 % of the sample (*n* = 105). Seventy eight point one percent of these individuals underwent chemotherapy (*n* = 89), while 7 % underwent hormone treatment (*n* = 8), and 6.1 % underwent radiotherapy (*n* = 7). The reports of participants about the controllability of the cancer were as follows: not at all (4.4 %, *n* = 5), not at all / middle (2.6 %, *n* = 3), middle (38.6 %, *n* = 44), middle / totally (11.4 %, *n* = 13), and totally (43 %, *n* = 49). The participants also evaluated the severity of their disease as not at all (1.8 %, *n* = 2), not at all / middle (4.4 %, *n* = 5), middle (33.3 %, *n* = 38), middle / totally (6.1 %, *n* = 7), and totally (54.4 %, *n* = 62) (See Table 1).

Table 1. Demographic Characteristics of the Sample

	M	*SD*	*N*	%
Age	46.25	6.80		
Education				
No education / Primary school			68	59.6
High school			25	21.9
University and above			18	15.8
Marital status				
Single/Divorced/Widow			20	17.5

Table 1 (continued)

	M	*SD*	*N*	%
Married			94	82.5
Occupation				
Employed			19	16.7
Unemployed			94	82.5
Child				
Yes			105	92.1
No			7	6.1
Residence				
Metropolitan			57	50
City			43	37.7
Town / Village			14	12.3
SES				
Low			21	18.4
Middle			84	73.7
High			4	3.5
Time since Diagnosis	6.85	3.24		
Disease Stage				
Stage I			30	26.3
Stage II			34	29.8
Stage III			27	23.7
Stage IV			2	1.8

Table 1 (continued)

	M	*SD*	*N*	%
Treatment				
Yes			105	92.1
No			6	5.3
Treatment type				
Chemotherapy			89	78.1
Radiotherapy			7	6.1
Hormone treatment			8	7
Controllability of disease				
Not at all			5	4.4
Not at all / Middle			3	2.6
Middle			44	38.6
Middle / Totally			13	11.4
Totally			49	43
Severity of disease				
Not at all			2	1.8
Not at all / Middle			5	4.4
Middle			38	33.3
Middle / Totally			7	6.1
Totally			62	54.4

2.2. Measures

The questionnaire set contained demographics and cancer history form, Basic Personality Trait Inventory (Gençöz & Öncül, in press), Locus of Control Scale (LCS) (Dağ, 2002), Turkish Ways of Coping Inventory (TWCI) (Gençöz, Gençöz, & Bozo, 2006), and Posttraumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996).

2.2.1. Demographic Information and Cancer History Form

This form included demographic questions about age, education, marital status, occupation, whether they have children, number of children, settlement, and socioeconomic status. Besides, it also included questions about cancer history such as time since diagnosis, stage of the disease, whether they receive any treatment, type of treatment, perceived controllability of the disease, and severity of their disease.

2.2.2. Basic Personality Traits Inventory

The scale was developed by Gençöz and Öncül (in press) to assess basic personality traits of individuals for Turkish culture. It consists of 45 determinants and 6 factors that are extraversion, conscientiousness, agreeableness, neuroticism, openness to experience, and negative valence. It uses 5-point Likert type scale ranging from 1 (*totally inappropriate*) to 5 (*very appropriate*).

During the development of the scale, 100 participants were asked to write adjectives about people who make them to feel different emotions. After deletion of the adjectives with similar meaning, adjectives that represent physical characteristics and argot adjectives, a pool of 226 items were derived and “Personality Traits List”

was generated from these items. This list of adjectives was administered to a sample of 510 participants with the ages of between 17 and 60. They were asked to evaluate how these adjectives are appropriate for themselves. After factor analysis, 5 basic personality traits that are congruent to the literature and another personality trait that contains negative personality traits were obtained. Finally, "Basic Personality Traits Inventory for Turkish Culture" was composed from 45 adjectives. Six factors were obtained after "principal component analysis with varimax and oblique rotation**"**: extraversion (8 items), conscientiousness (8 items), agreeableness (8 items), neuroticism (9 items), openness to experience (6 items), and negative valence (6 items). The Cronbach's alpha coefficients were .89, .85, .85, .83, .80, .71, respectively. The internal consistencies of these six factors were ranged from .71 to .89. The test-retest correlations of these factors were between .71 and .84. The correlation of "Basic Personality Traits Inventory" with other scales was examined. These scales were Rosenberg Self Esteem Scale, Beck Depression Inventory, State-Trait Anxiety Inventory, Liebowitz Social Anxiety Scale, Locus of Control Scale, Ways of Coping Inventory, Positive-Negative Affect Scale, Multidimensional Scale of Perceived Social Support, and Reassurence Seeking Scale. The correlation between "Basic Personality Traits Inventory" and the other scales were found to be congruent with expectations. The Cronbach's alpha coefficients of the subscales for the present sample were as following: extraversion (α = .68), conscientiousness (α = .76), agreeableness (α = .66), neuroticism (α = .75), openness to experience (α = .67), and negative valence (α = .21).

2.2.3. Locus of Control Scale (LCS)

The original scale was developed by Dağ (2002). It consists of 47 items that measure whether people attribute the consequences of their behaviors to internal or external sources. It is a 5-point Likert type scale ranging from 1 (*totally inappropriate*) to 5 (*totally appropriate*). Higher scores on this scale indicate external locus of control, while lower scores indicate internal locus of control.

The development of the scale was conducted in two stages (Dağ, 2002). In the first stage, a pool of 80 items was composed from items of some major locus of control scales, most of them with some partial change. These items were administered to 272 college students. 47 items were obtained on the basis of item analysis, including item-total correlations and comparison of extreme groups. In the second stage, this 47 item Locus of Control Scale was administered to another 111 college students. Fifty-seven of these participants also received the Rotter's I-E scale (Rotter, 1966, cited in Rotter, 1990), Rosenbaum's Learned Resourcefulness Schedule (Rosenbaum, 1980), the SCL-90-R (Derogatis, 1977), and the Paranormal Beliefs Scale (Tobacyk & Milford, 1983).

The reliability and validity of Locus of Control Scale was examined by item analysis, Pearson correlations and factor analysis. The internal consistency of this 47-item scale was .92. The test-retest reliability of the scale was .88 and test-retest reliabilities of subscales were ranged from 61-89. Based on the factor analysis, five factors were obtained: (1) "general internal control belief" or "personal control", (2) "belief in luck", (3) "meaninglessness to strive", (4) "fatalism", and (5) "belief in unfaithful world". The Cronbach's alpha of these factors were .87, .79, .76, .74, and .61, respectively. According to the convergent validity analysis, this scale had

significant relationship with other major locus of control scales including Rotter's I-E scale (r = .67), the Rosenbaum's Learned Resourcefulness Schedule (r = -.39), the SCL-90-R (r = .25), and the Paranormal Beliefs Scale (r = .46). In the current study, internal consistency coefficient of the total scale was found to be .93. The Cronbach's alpha coefficients of the subscales for the present sample were as following: personal control (α = .91), belief in luck (α = .66), meaninglessness to strive (α = .84), fatalism (α = .71), and belief in unfaithful world (α = .53).

2.2.4. Turkish Ways of Coping Inventory (TWCI)

The original scale was developed by Folkman and Lazarus (1980) and it consists of 68-item checklist that measure problem-focused and emotion-focused types of coping. Then, Folkman and Lazarus (1985) revised the checklist that has 66 items and 8 factors. The revised Ways of Coping is 5-point Likert type scale ranging from 1 (*not used*) to 5 (*used a great deal*).

The Turkish adaptation of the Ways of Coping Checklist was conducted by Siva (1991) and 6 new items were added, because Turkish people are tentative to use superstition and fatalism to cope with stress. Therefore, Turkish version of WCI is a 74-item scale, which was developed to assess coping strategies. Siva used 5-point Likert-type scale instead of the original 4-point Likert type scale. The internal consistency of the scale was .91.

The hierarchical dimensions of coping styles were examined by Gençöz, Gençöz, and Bozo (2006). In the study, the scale was administered to 194 university students. 5 factors were identified in the factor analysis by using varimax rotation. These factors were problem-focused coping (α = .90), religious coping (α = .89),

seeking social support (α = .84), self-blame/helplessness (α = .83), and distancing (α = .76). The second-order analysis of Turkish version of WCI displayed three factors, namely, emotion-focused coping (α = .88), problem-focused coping (α = .90), and seeking social support: indirect coping (α = .84) (Gençöz, Gençöz, & Bozo, 2006). In the current study, the internal consistency coefficient of subscales were found as following: emotion-focused coping (α = .80), problem-focused coping (α = .91), and seeking social support: indirect coping (α = .79).

2.2.5. Posttraumatic Growth Inventory (PTGI)

PTGI is developed by Tedeschi and Calhoun (1996) to assess positive changes in the aftermath of the traumatic events. It consists of 21 items and 5 subscales that measure new possibilities, relating to others, personal strength, spiritual change, and appreciation of life. It is a 6-point Likert type scale ranging from 0 (*I did not experience this change as a result of my crisis*) to 5 (*I experienced this changed to a very great degree*). It was developed by Tedeschi and Calhoun (1996), translated into Turkish by Kılıç (2005), and then revised by Dirik and Karancı (2008). Tedeschi and Calhoun (1996) conducted reliability study of PTGI among university students. The 34-item scale was administered to 604 undergraduate students. After varimax rotation, principal component analysis was conducted and 21 items were retained. According to the results of this reliability/validity study, the construct validity of the scale was acceptable, its internal consistency coefficient was .90, and its test-retest reliability was over two month time interval .71. Reliability coefficients for the subscale of ‘new possibilities’ was .84, ‘relating to others’ was

.85, ‘personal strength’ was .72, ‘spiritual change’ was .85, and ‘appreciation of life’ was .67.

Turkish translation of the PTGI was performed by Kılıç (2005) with different wording. In the study of Kılıç (2005), instead of 6-point Likert type scale, a 5-point scale was used. Then, the Turkish version of PTGI was revised and adapted by Dirik and Karancı (2008). Dirik and Karancı (2008) used original 6-point response format in order to be more veridical to the original scale. The scale was administered to 117 rheumatoid arthritis patients. Based on their factor analysis, three factors were obtained as follows ‘relationship with others’ (α = .86), ‘philosophy of life’ (α = .87), and ‘self-perception’ (α = .88). The Cronbach’s alpha level of the whole scale was .94. The Cronbach’s alpha coefficient of the total scale for the present sample was .94. In the current study, the internal consistency coefficients of the subscales were found as following: relationship with others (α = .89), philosophy of life (α = .83), and self-perception (α = .87).

2.3. Procedure

The data was collected from Dr. Abdurrahman Yurtarslan Oncology Education and Research Hospital in Ankara. Necessary ethical approvals were obtained from Research Center for Applied Ethics of Middle East Technical University, City Health Directorship of Ankara, and the hospital before the data collection. After the aim of the study and confidentiality of personal identity were explained to patients, inform consents were obtained from the participants. Only volunteer patients were included in the present study. Although most of the participants filled the questionnaires by themselves, some participants were

administered the questionnaires orally due to their low education level. The application of each questionnaire took approximately 40 minutes for participants who filled the questionnaires by themselves and 60 minutes for participants who were administered the questionnaires orally.

2.4. Statistical Analysis

For data analysis the Statistical Package of for the Social Sciences (SPSS) was used in the study. The reliability analyses were run for each scale used in the study. Three t-test analyses were conducted to see the differences between married and single/divorced/widow breast cancer survivors; employed and unemployed breast cancer survivors; and breast cancer survivors with low and middle socioeconomic status in terms of study variables. Moreover, one separate one-way analysis of variance (ANOVA) was conducted to reveal the differences among education level groups in terms of the study variables. In addition, a zero order Pearson correlation analysis was run in order to examine the relationships among study variables. Finally, 72 separate mediation analyses were run to test the mediation models.

CHAPTER 3

RESULTS

3.1. Preliminary Analyses

The descriptive information about all the scales and subscales used in the present study (Basic Personality Traits Inventory: extraversion, openness to experience, conscientiousness, neuroticism, agreeableness, negative valence; Locus of Control Scale (LCS); Turkish Ways of Coping Inventory (TWCI): emotion-focused coping (EFC), problem-focused coping (PFC), and seeking social support: indirect coping (SSS); and Posttraumatic Growth Inventory (PTGI): relationship with others, philosophy of life, and self-perception) were presented. Moreover, the reliability analyses showed that except negative valence subscale of Basic Personality Traits Inventory, all measures used in the current study had satisfactory internal consistency reliability values (See Table 2).

Table 2. Descriptive Information Regarding the Measures of Study

Measures	Alpha Coefficient	Mean	Standard Deviation	Min-Max
Basic Personality Traits Inventory				
Extraversion	.68	33.90	3.75	27-40
Conscientiousness	.76	36.01	3.54	20-40
Agreeableness	.66	36.75	3.01	28-40
Neuroticism	.75	25.47	6.91	9-41
Openness to experience	.67	23.67	3.91	9-30
Negative valence	.21	8.53	2.06	6-16
LCS	.93	164.90	24.16	114-235
TWCI				
PFC	.91	116.41	17.14	81-140
EFC	.80	69.40	15.12	35-106
SSS	.79	44.01	7.48	30-60
PTGI	.94	73.49	24.15	0-105
Relationship with others	.89	23.96	9.46	0-35
Philosophy of life	.83	14.75	7.28	0-25
Self-perception	.87	34.78	9.63	0-45

3.2. Group Comparisons

Three separate independent sample t-tests were conducted in order to examine the group differences on study variables.

In the first t-test analysis, there was a significant difference between married and single/divorced/widow participants on controllability of disease ($t(112) = -2.23$, $p < .05$). Similarly, married breast cancer survivors ($m = 2.97$, $sd = 1.10$) reported higher controllability of disease compared to single/divorced/widow breast cancer survivors ($m = 2.35$, $sd = 1.23$) (See Table 3). That is, married survivors considered breast cancer as a more controllable disease compared to single/divorced/widow survivors. There were no significant differences between married and single/divorced/widow survivors on the remaining variables (See Table 3).

Table 3. Descriptive Statistics and t-Test Results for Married and Single/Divorced/Widow Breast Cancer Survivors

		n	*m*	*sd*	*t*(112)	*p*
Time since	Married	94	6.62	2.92	1.69	.09
Diagnosis	Single/divorced/widow	20	7.95	4.35	1.69	.09
Controllability	Married	94	2.97	1.10	-2.23	.03
	Single/divorced/widow	20	2.35	1.23	-2.23	.03
Severity	Married	94	3.07	1.11	-.09	.93
	Single/divorced/widow	20	3.05	1.10	-.09	.93
Extraversion	Married	94	33.80	3.70	.59	.56
	Single/divorced/widow	20	34.35	4.04	.59	.56

Table 3 (continued)

		n	*m*	*sd*	*t*(112)	*p*
Conscientiousness	Married	94	35.93	3.54	.57	.57
	Single/divorced/widow	20	36.43	3.63	.57	.57
Agreeableness	Married	94	36.77	3.02	-.16	.88
	Single/divorced/widow	20	36.65	3.03	-.16	.88
Neuroticism	Married	94	25.62	6.84	-.51	.61
	Single/divorced/widow	20	24.75	7.34	-.51	.61
Openness	Married	94	23.70	3.40	-.16	.88
to Experience	Single/divorced/widow	20	23.55	5.85	-.16	.88
Negative	Married	94	8.56	1.94	-.31	.76
Valence	Single/divorced/widow	20	8.40	2.58	-.31	.76
Locus	Married	94	166.08	24.32	-1.13	.26
of Control	Single/divorced/widow	20	159.36	23.21	-1.13	.26
Problem-Focused	Married	94	113.02	16.28	-.85	.40
Coping	Single/divorced/widow	20	109.54	17.88	-.85	.40
Emotion-Focused	Married	94	70.00	14.78	-.91	.37
Coping	Single/divorced/widow	20	66.61	16.77	-.91	.37
Seeking Social	Married	94	44.55	7.47	-1.66	.10
Support	Single/divorced/widow	20	41.51	7.22	-1.66	.10
PTG	Married	94	73.24	24.38	.24	.81
	Single/divorced/widow	20	74.65	23.62	.24	.81
Relationship	Married	94	24.23	9.48	-.66	.51
with others	Single/divorced/widow	20	22.70	9.52	-.66	.51

Table 3 (continued)

		n	*m*	*sd*	*t*(112)	*p*
Philosophy of	Married	94	14.59	7.20	.51	.61
Life	Single/divorced/widow	20	15.50	7.82	.51	.61
Self-Perception	Married	94	34.42	9.95	.86	.39
	Single/divorced/widow	20	36.45	7.94	.86	.39

There were significant difference between employed and unemployed participants on the variables of controllability of disease ($t(111) = 2.11$, $p < .05$), locus of control ($t(111) = 2.03$, $p < .05$) and emotion-focused coping ($t(111) = 2.77$, $p < .01$). Similarly, unemployed participants ($m = 2.97$, $sd = 1.11$) had higher scores on controllability of disease than employed participants ($m = 2.37$, $sd = 1.21$). In the same way, unemployed breast cancer survivors ($m = 119.84$, $sd = 24.70$) reported significantly higher locus of control scores compared to employed breast cancer survivors ($m = 107.62$, $sd = 19.24$). In other words, unemployed breast cancer survivors reported significantly higher external locus of control than employed breast cancer survivors. Unemployed participants ($m = 71.04$, $sd = 14.66$) also had higher scores on emotion-focused coping than employed participants ($m = 60.77$, $sd = 15.08$). There were no significant differences between employed and unemployed survivors on the remaining variables (See Table 4).

Table 4. Descriptive Statistics and t-Test Results for Employed and Unemployed Breast Cancer Survivors

		n	*m*	*sd*	*t*(111)	*p*
Time since	Employed	19	5.95	2.55	1.34	.18
Diagnosis	Unemployed	94	7.04	3.36	1.34	.18
Controllability	Employed	19	2.37	1.21	2.11	.04
	Unemployed	94	2.97	1.11	2.11	.04
Severity	Employed	19	3.37	.96	-1.33	.19
	Unemployed	94	3.00	1.13	-1.33	.19
Extraversion	Employed	19	33.97	4.70	-.06	.95
	Unemployed	94	33.91	3.57	-.06	.95
Conscientiousness	Employed	19	35.06	4.67	1.25	.21
	Unemployed	94	36.17	3.27	1.25	.21
Agreeableness	Employed	19	36.92	2.77	-.28	.78
	Unemployed	94	36.71	3.09	-.28	.78
Neuroticism	Employed	19	25.21	8.21	.17	.87
	Unemployed	94	25.51	6.70	.17	.87
Openness	Employed	19	23.95	3.52	-.35	.73
to Experience	Unemployed	94	23.60	4.01	-.35	.73
Negative	Employed	19	8.54	2.19	-.05	.96
Valence	Unemployed	94	8.51	2.05	-.05	.96
Locus	Employed	19	154.62	19.24	2.03	.05
of Control	Unemployed	94	166.84	24.70	2.03	.05

Table 4 (continued)

		n	*m*	*sd*	*t*(111)	*p*
Problem-Focused	Employed	19	113.35	16.58	1.60	.11
Coping	Unemployed	94	109.54	17.88	1.60	.11
Emotion-Focused	Employed	19	60.77	15.08	2.77	.01
Coping	Unemployed	94	71.04	14.66	2.77	.01
Seeking Social	Employed	19	44.05	7.89	.25	.80
Support	Unemployed	94	41.51	7.22	.25	.80
PTG	Employed	19	74.26	23.43	.89	.37
	Unemployed	94	74.65	23.62	.89	.37
Relationship	Employed	19	21.85	11.26	1.03	.30
with others	Unemployed	94	24.31	9.08	1.03	.30
Philosophy of	Employed	19	14.65	8.26	.07	.95
Life	Unemployed	94	14.77	7.16	.07	.95
Self-Perception	Employed	19	32.32	10.48	1.19	.24
	Unemployed	94	35.19	9.44	1.19	.24

In the third t-test analysis, there was a significant difference between participants with low socioeconomic status and middle socioeconomic status on negative valence as one of the Big Five personality traits ($t(103) = 2.79$, $p < .01$). Only low socioeconomic status and middle socioeconomic status groups were compared to each other, because there were only 4 participants in the high socioeconomic status group. There were no significant differences between

participants with low socioeconomic status and middle socioeconomic status on the remaining variables (See Table 5).

Table 5. Descriptive Statistics and t-Test Results for Breast Cancer Survivors with Low and Middle Socioeconomic Status

		n	*m*	*sd*	*t*(103)	*p*
Time since	Low SES	21	6.78	3.64	-.17	.87
Diagnosis	Middle SES	84	6.91	3.19	-.17	.87
Controllability	Low SES	21	2.90	1.26	.38	.71
	Middle SES	84	2.80	1.13	.38	.71
Severity	Low SES	21	2.71	1.15	-1.69	.09
	Middle SES	84	3.15	1.05	-1.69	.09
Extraversion	Low SES	21	33.58	3.14	-.22	.83
	Middle SES	84	33.78	3.76	-.22	.83
Conscientiousness	Low SES	21	35.79	3.50	-.25	.81
	Middle SES	84	35.99	3.18	-.25	.81
Agreeableness	Low SES	21	36.74	2.65	.22	.82
	Middle SES	84	36.58	3.04	.22	.82
Neuroticism	Low SES	21	24.07	7.25	-1.01	.32
	Middle SES	84	25.74	6.67	-1.01	.32
Openness	Low SES	21	23.85	4.46	.53	.60
to Experience	Middle SES	84	23.35	3.73	.53	.60

Table 5 (continued)

		n	*m*	*sd*	*t*(103)	*p*
Negative	Low SES	21	9.67	2.54	2.80	.01
Valence	Middle SES	84	8.30	1.85	2.80	.01
Locus	Low SES	21	163.68	18.02	-.20	.85
of Control	Middle SES	84	164.85	25.80	-.20	.85
Problem-Focused	Low SES	21	111.31	13.56	-.12	.90
Coping	Middle SES	84	111.82	17.49	-.12	.90
Emotion-Focused	Low SES	21	72.49	14.52	1.12	.27
Coping	Middle SES	84	68.45	14.92	1.12	.27
Seeking Social	Low SES	21	44.32	6.65	.26	.80
Support	Middle SES	84	43.85	7.74	.26	.80
PTG	Low SES	21	75.34	26.12	.55	.59
	Middle SES	84	72.13	23.57	.55	.59
Relationship	Low SES	21	25.02	9.61	.66	.51
with others	Middle SES	84	23.51	9.25	.66	.51
Philosophy of	Low SES	21	14.71	7.75	.18	.86
Life	Middle SES	84	14.40	7.12	.18	.86
Self-Perception	Low SES	21	35.61	11.19	.59	.56
	Middle SES	84	34.22	9.23	.59	.56

A one-way analysis of variance (ANOVA) was conducted to reveal the effect of education on the study variables. According to the results, the effect of education was significant on the number of children ($F(2,103) = 6.99$, $p < .001$). When the differences among no education/primary school, high school, and university and above groups were examined with Tukey HSD test, it was found that no education/primary school group ($m = 2.40$, $sd = .97$) and high school group ($m = 2.21$, $sd = .83$) had significantly higher number of children compared to university and above group ($m = 1.47$, $sd = .80$). The difference between no education/primary school and high school groups was not significant.

The effect of education on openness to experience personality trait was significant ($F(2,108) = 3.74$, $p < .05$). When the differences between no education/primary school, high school, and university and above groups were examined with Tukey HSD test, the results showed that no education/primary school group ($m = 24.26$, $sd = 3.25$) had significantly higher scores on openness to experience than high school group ($m = 22.04$, $sd = 4.80$). There were no other significant differences between these groups in terms of openness to experience.

The results also showed that the effect of education was significant on locus of control ($F(2,108) = 9.31$, $p < .001$). When the differences between no education/primary school, high school, and university and above groups were examined with Tukey HSD test, it was found that both high school group ($m = 157.92$, $sd = 22.62$) and university and above group ($m = 149.28$, $sd = 13.87$) had significantly lower locus of control scores than no education/primary school group ($m = 172.49$, $sd = 24.28$). In other words, no education/primary school group had significantly more external locus of control than high school group and university

and above group. The difference between high school group and university and above group was no significant. Similar results were also obtained for the effect of education on emotion-focused coping.

The effect of education on emotion-focused coping was also significant ($F(2,108) = 11.13$, $p < .001$). When the differences between no education/primary school, high school and university and above groups were examined with Tukey HSD test, the results showed that no education/primary school group ($m = 74.34$, $sd = 14.72$) reported significantly higher scores on emotion-focused coping than high school group ($m = 65.11$, $sd = 11.85$) and university and above group ($m = 58.23$, $sd = 13.82$). There was no significant difference between high school group and university and above group.

The results also showed that the effect of education on relationship with others ($F(2,108) = 3.25$, $p < .05$) and self-perception ($F(2,108) = 3.55$, $p < .05$) that are factors of PTG were significant. When the differences between no education/primary school, high school, and university and above groups were examined with Tukey HSD test, it was found that no education/primary school group ($m = 25.57$, $sd = 9.55$) had significantly higher scores on relationship with others compared to university and above group ($m = 19.39$, $sd = 8.99$). Moreover, the results showed that no education/primary school group ($m = 36.58$, $sd = 8.87$) had significantly higher scores on self-perception compared to university and above group ($m = 30.34$, $sd = 8.17$). There were no other significant differences among these three groups in terms of relationship with others and self-perception (See Table 6).

Table 6. Descriptive Statistics, Analysis of Variance and Tukey HSD Test for Education in terms of Study Variables

	No Education / Primary School		High School		University and Above		One-Way ANOVA		
	m	*sd*	*m*	*sd*	*m*	*sd*	*df*	*F*(2,103)	*p*
Number of Children	2.40_a	.97	2.21_a	.83	1.47_b	.80	2	6.99	.001
	No Education / Primary School		High School		University and Above		One-Way ANOVA		
	m	*sd*	*m*	*sd*	*m*	*sd*	*df*	*F*(2,108)	*p*
Openness to Experience	24.26_a	3.25	22.04_b	4.80	24.44_{ab}	3.20	2	3.74	.03
LOC	172.49_a	24.28	157.92_b	22.62	149.28_b	13.87	2	9.31	.000
EFC	74.34_a	14.72	65.11_b	11.85	58.23_b	13.82	2	11.13	.001
Relationship with others	25.57_a	9.55	23.14_{ab}	9.04	19.39_b	8.99	2	3.25	.04
Self-perception	36.58_a	8.87	33.20_{ab}	11.71	30.34_b	8.17	2	3.55	.03

Note. The mean scores that do not share the same subscript on the same row are significantly different from each other at .05 alpha level of Tukey's HSD test.

3.3. Pearson's Correlations among Variables

Zero order correlation coefficients among the variables were examined to reveal the relationship among sociodemographic variables, basic personality traits, locus of control, ways of coping, and PTG (See Table 7). In terms of demographic variables, age was significantly correlated with number of children ($r = .20$, $p < .05$). Age was also correlated with some basic personality traits that are extraversion ($r =$

.20, $p < .05$), conscientiousness ($r = .29$, $p < .01$), agreeableness ($r = .30$, $p < .01$), and openness to experience ($r = .23$, $p < .05$). However, it was not significantly correlated with locus of control, ways of coping, and PTG. Number of children was also correlated with conscientiousness ($r = .27$, $p < .01$), agreeableness ($r = .23$, $p < .05$), openness to experience ($r = .28$, $p < .01$), as well as locus of control ($r = .27$, $p < .01$), problem-focused coping ($r = .32$, $p < .01$), and emotion-focused coping ($r = .33$, $p < .01$). Separately, controllability of disease was found to be significantly correlated with openness to experience ($r = .29$, $p < .01$), problem-focused coping ($r = .21$, $p < .05$), and PTG ($r = .30$, $p < .01$). In addition, severity of disease was correlated with conscientiousness ($r = .22$, $p < .05$), agreeableness ($r = .25$, $p < .01$), and problem-focused coping ($r = .20$, $p < .05$). As shown in Table 7, there were also significant correlations among basic personality traits, locus of control, ways of coping, and PTG.

Table 7. Correlation Coefficient among Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	1														
2. Number of children	.199*	1													
3. Controllability	-.012	.133	1												
4. Severity	.084	.094	.015	1											
5. Extraversion	.201*	.136	.098	.115	1										
6. Conscientiousness	.285**	.274**	.093	.224*	.416**	1									
7. Agreeableness	.298**	.229*	.121	.253**	.504**	.475**	1								
8. Neuroticism	-.130	-.071	-.122	-.038	-.165	-.010	-.133	1							
9. Openness	.225*	.276**	.290**	.167	.528**	.503**	.354**	-.107	1						
10. Negative valence	-.134	-.167	-.085	-.212*	-.218*	-.203*	-.236*	.248**	-.054	1					
11. LOC	.018	.268**	.082	.170	.169	.307**	.215*	.148	.053	-.049	1				
12. PFC	.081	.320**	.209*	.202*	.270**	.409**	.318**	.017	.304**	-.108	.700**	1			
13. EFC	.092	.330**	.165	.136	.154	.347**	.247**	.110	.271**	.027	.741**	.659**	1		
14. SSS	-.116	.126	.214*	.196*	.095	.162	.165	.120	.083	-.072	.637**	.633**	.598**	1	
15. PTG	.086	.010	.298**	.021	.182	.243**	.212*	.183	.231*	-.036	.277**	.305**	.406**	.406**	1

Note1. For number of children, $N = 109$; For other correlations, $N = 114$

Note 2. $*p < .05$, $**p < .01$.

Note 3. LOC: Locus of control, PFC: Problem-focused coping, EFC: Emotion-focused coping, SSS: Seeking social support: indirect coping, PTG: Posttraumatic Growth

3.4. Model Testing

In order to examine the main hypotheses of the study, 72 mediation models were tested. The models included basic personality traits and locus of control as independent variables; ways of coping as mediators, and posttraumatic growth and its factors as dependent variables. According to Baron and Kenny (1986), four conditions were essential to confirm a variable as mediator: (1) there has to be a significant relationship between independent and dependent variables, (2) there has to be a significant relationship between independent variable and the mediator, (3) the mediator has still to predict dependent variable after controlling the independent variable, and (4) the relationship between independent and dependent variable has to be reduced when the mediator is in the equation.

Four separate regression analyses were conducted for each model by using standard multiple regression analysis. Subsequently, Sobel test was conducted to test the significance of indirect effects.

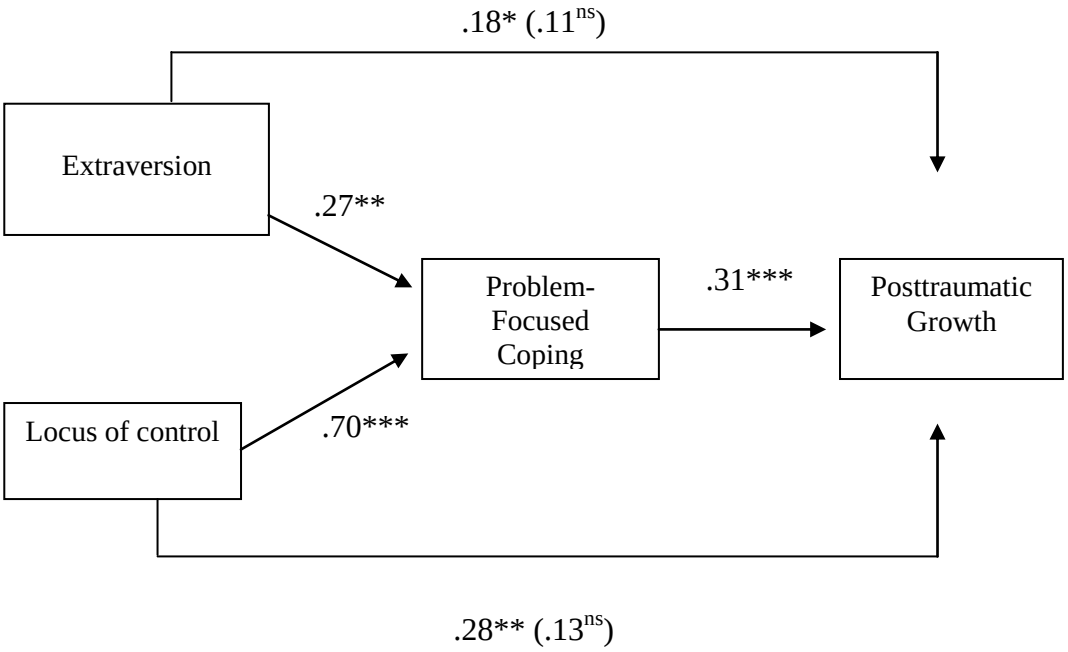
3.4.1. Mediation Models for Posttraumatic Growth

Seventy two mediation models were performed for posttraumatic growth and its factors (changes in relationship with others, changes in philosophy of life and changes in self-perception) as dependent variables. The independent variables were basic personality traits (extraversion, conscientiousness, agreeableness, neuroticism, openness to experience, and negative valence) and locus of control. The mediators were coping strategies, that is problem-focused coping, emotion-focused coping, and seeking social support.

3.4.1.1. Problem-Focused Coping as Mediator

The relationship between extraversion and posttraumatic growth was mediated by problem-focused coping. Extraversion was a marginally significant predictor of posttraumatic growth (β = .18, p = .052) and it was a significant predictor of problem-focused coping (β = .27, p < .01). Problem-focused coping was a significant predictor of posttraumatic growth (β = .31, p < .001). The final condition of mediation was also met: The standardized regression coefficient between extraversion and posttraumatic growth decreased when controlling for problem-focused coping (from β = .18, p = .052 to β = .11, p = .25). The mediator role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.24, p < .05). Therefore, problem-focused coping mediated the relationship between extraversion and posttraumatic growth (See Figure 4).

Problem-focused coping did also mediate the relationship between locus of control and posttraumatic growth. Locus of control was a significant predictor of posttraumatic growth (β = .28, p < .01) and problem-focused coping (β = .70, p < .001). Problem-focused coping was significant predictor of posttraumatic growth (β = .31, p < .001). The standardized regression coefficient between locus of control and posttraumatic growth decreased significantly when controlling for problem-focused coping (from β = .28, p < .01 to β = .13, p = .32). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 3.23, p < .01). Hence, the relationship between locus of control and posttraumatic growth was mediated by problem-focused coping (See Figure 4).



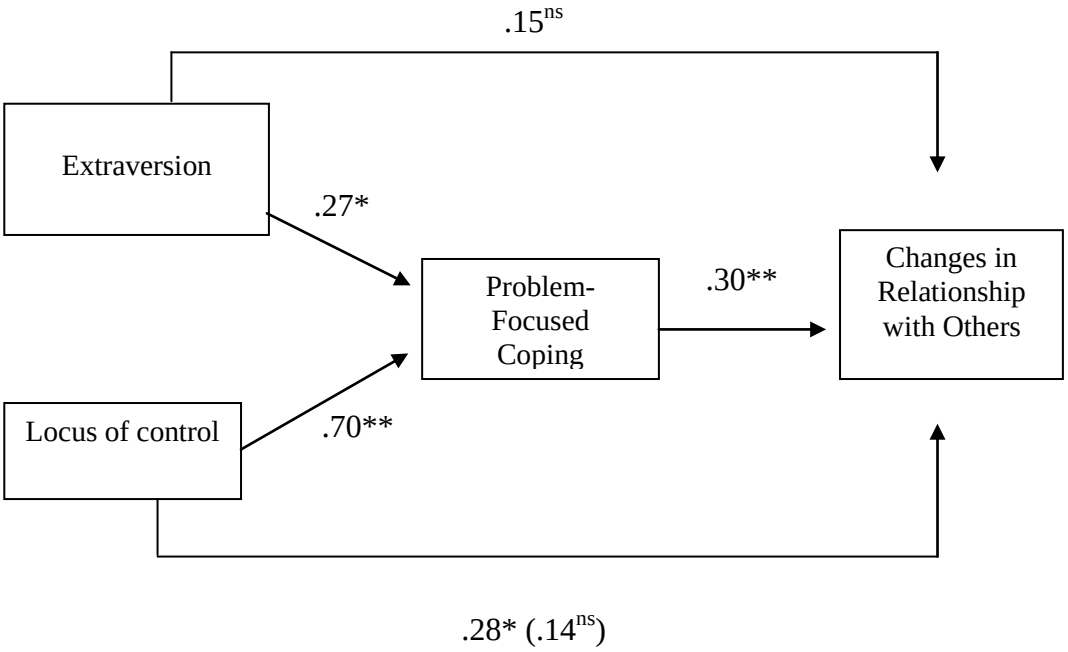
*Note. * p < .05, ** p < .01, *** p < .001*

Figure 4. Extraversion – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Problem-focused Coping as the Mediator

In addition to posttraumatic growth, its factors that are changes in relationship with others, changes in philosophy of life, and changes in self-perception were also used as dependent variables. In terms of changes in relationship with others, the relationship between extraversion and changes in relationship with others was not mediated by problem-focused coping, because the conditions of mediation were not fulfilled. Although extraversion was a significant predictor of problem-focused coping (β = .27, p < .01) and problem-focused coping was a significant predictor of changes in relationship with others (β = .30, p < .001), changes in relationship with others was not significantly predicted by extraversion (β = .15, p = .11). Accordingly,

problem-focused coping was not a mediator of the relationship between extraversion and changes in relationship with others (See Figure 5).

For the second independent variable, problem-focused coping mediated the relationship between locus of control and changes in relationship with others. Locus of control was a significant predictor of changes in relationship with others (β = .28, p < .01) and problem-focused coping (β = .70, p < .001). Problem-focused coping was a significant predictor of changes in relationship with others (β = .30, p < .001). The standardized regression coefficient between locus of control and changes in relationship with others decreased significantly when controlling for problem-focused coping (from β = .28, p < .01 to β = .14, p = .29). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 3.12, p < .01). Therefore, the relationship between locus of control and changes in relationship with others was mediated by problem-focused coping (See Figure 5).

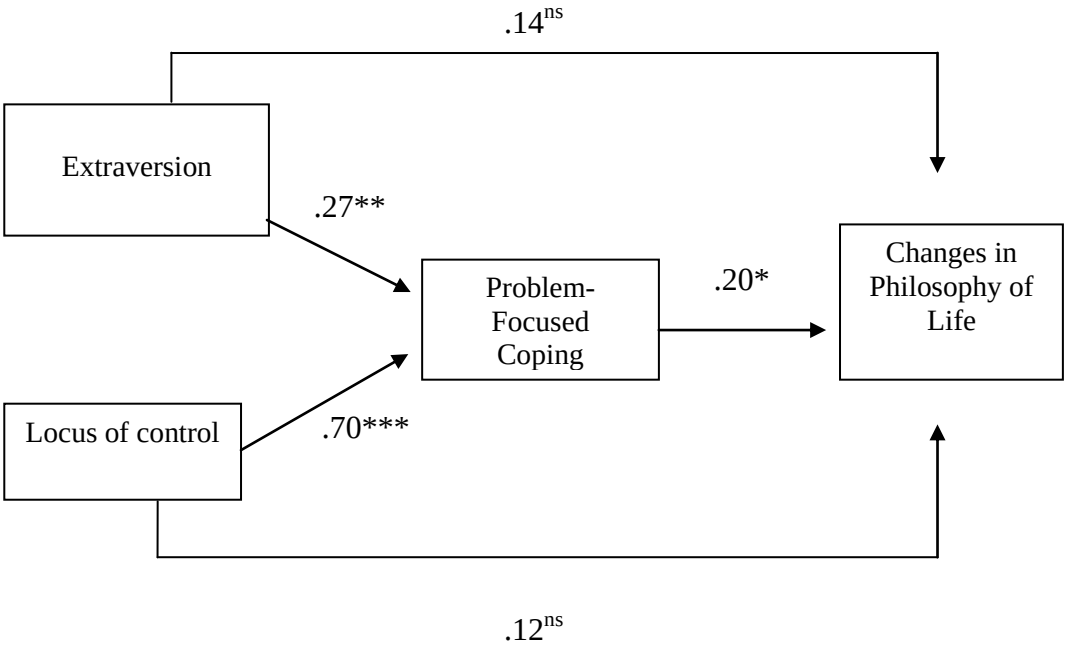


*Note. * $p < .01$, ** $p < .001$*

Figure 5. Extraversion – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Problem-focused Coping as the Mediator

In terms of changes in philosophy of life, the relationship between extraversion and changes in philosophy of life was not mediated by problem-focused coping, because the conditions of mediation were not fulfilled. Extraversion was a significant predictor of problem-focused coping ($\beta = .27$, $p < .01$). Moreover, problem-focused coping was a significant predictor of changes in philosophy of life ($\beta = .20$, $p < .05$). However, extraversion was not a significant predictor of changes in philosophy of life ($\beta = .14$, $p = .15$) Therefore, problem-focused coping did not mediate the relationship between extraversion and changes in philosophy of life (See Figure 6).

Locus of control was a significant variable of problem-focused coping (β = .70, p < .001) and problem-focused coping was a significant predictor of changes in philosophy of life (β = .20, p < .05). On the other hand, locus of control was not a significant predictor of changes in philosophy of life (β = .12, p = .21). The relationship between locus of control and changes in philosophy of life was not mediated by problem-focused coping since the conditions of mediation were not fulfilled (See Figure 6).

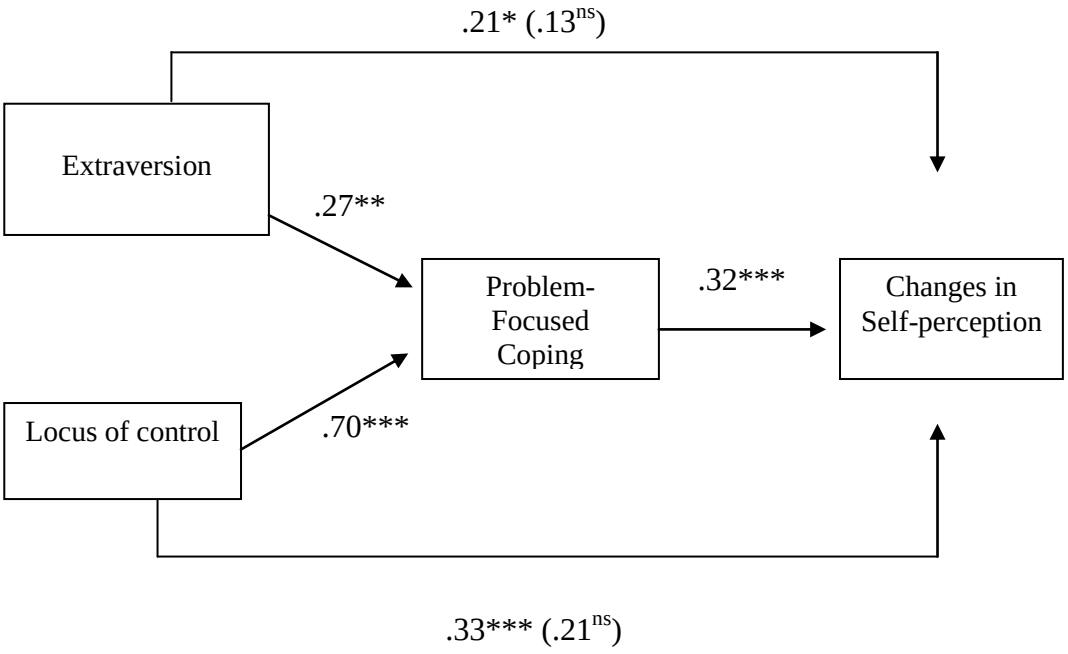


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 6. Extraversion – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Problem-focused Coping as the Mediator

In terms of changes in self-perception, problem-focused coping mediated the relationship between extraversion and changes in self-perception. Extraversion was a significant predictors of both changes in self-perception (β = .21, p < .05) and problem-focused coping (β = .27, p < .01). Problem-focused coping was a significant predictor of changes in self-perception (β = .32, p < .001). The standardized regression coefficient between openness to experience and changes in self-perception decreased significantly when controlling for problem-focused coping (from β = .21, p < .05 to β = .13, p = .16). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.29, p < .05). Hence, the relationship between extraversion and changes in self-perception was mediated by problem-focused coping (See Figure 7).

Problem-focused coping mediated the relationship between locus of control and changes in self-perception. Locus of control was a significant predictor of changes in self-perception (β = .33, p < .001) and problem-focused coping (β = .70, p < .001). Problem-focused coping was a significant predictor of changes in self-perception (β = .32, p < .001). The standardized regression coefficient between locus of control and changes in self-perception decreased significantly when controlling for problem-focused coping (from β = .33, p < .001 to β = .21, p = .09). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 3.38, p < .001). Therefore, the relationship between locus of control and changes in self-perception was mediated by problem-focused coping (See Figure 7).

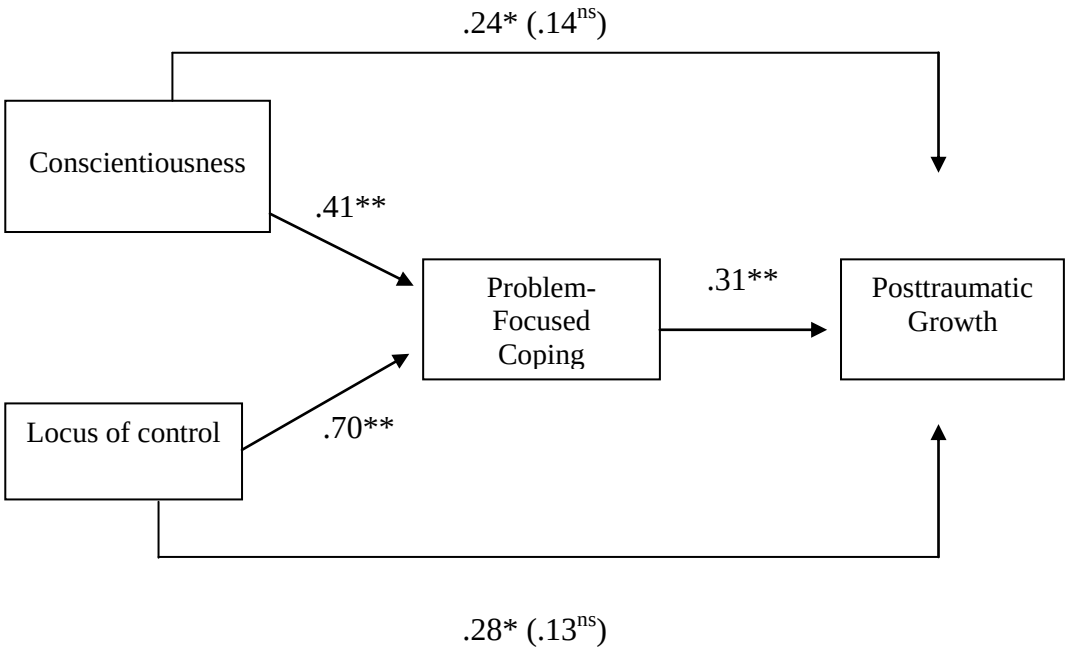


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 7. Extraversion – Changes in Self-Perception and Locus of Control – Changes in Self-perception Relationships Having Problem-focused Coping as the Mediator

The relationship between conscientiousness and posttraumatic growth was mediated by problem-focused coping. Conscientiousness was a significant predictor of posttraumatic growth (β = .24, p < .01) and problem-focused coping (β = .41, p < .001). Problem-focused coping was a significant predictor of posttraumatic growth (β = .31, p < .001). The final condition of mediation was also met: The standardized regression coefficient between conscientiousness and posttraumatic growth decreased significantly when controlling for problem-focused coping (from β = .24, p < .01 to β = .14, p = .15). The mediator role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.76, p < .01). Therefore, the relationship between

conscientiousness and posttraumatic growth was mediated by problem-focused coping (See Figure 8).

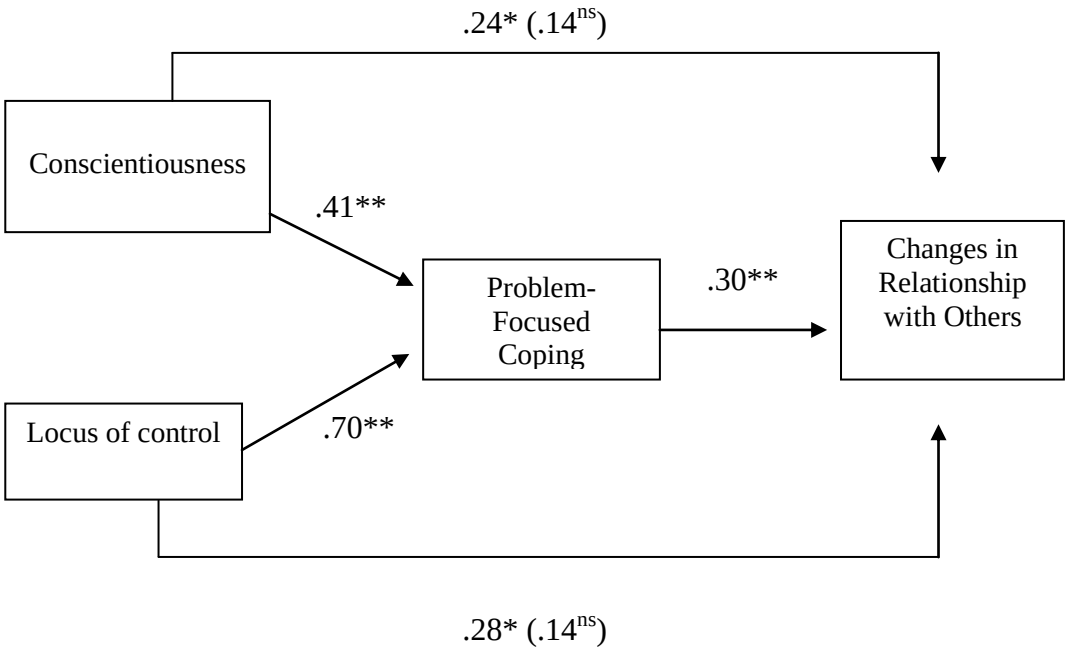


*Note. * $p < .01$, ** $p < .001$*

Figure 8. Conscientiousness – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Problem-focused Coping as the Mediator

In terms of changes in relationship with others, the relationship between conscientiousness and changes in relationship with others was mediated by problem-focused coping. Conscientiousness was a significant predictor of changes in relationship with others ($\beta = .24$, $p < .01$) and problem-focused coping ($\beta = .41$, $p < .001$). Problem-focused coping was a significant predictor of changes in relationship

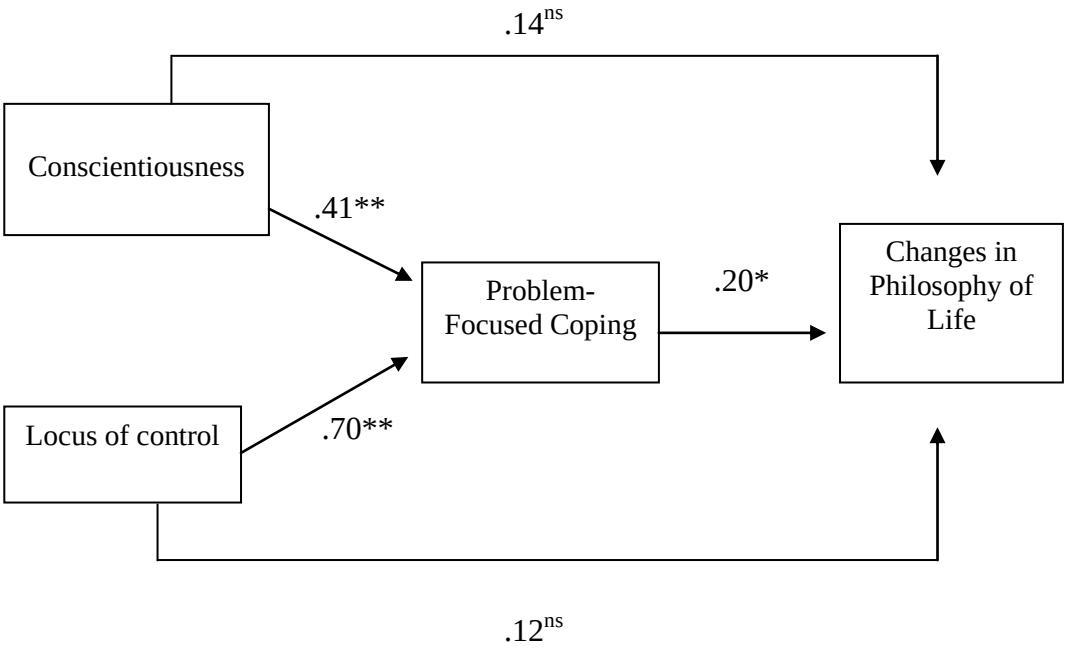
with others (β = .30, p < .001). The final condition of mediation was also met: The standardized regression coefficient between conscientiousness and changes in relationship with others decreased significantly when controlling for problem-focused coping (from β = .24, p < .01 to β = .14, p = .15). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.69, p < .01). Hence, problem-focused coping mediated the relationship between conscientiousness and changes in relationship with others (See Figure 9).



*Note. * p < .01, ** p < .001*

Figure 9. Conscientiousness – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Problem-focused Coping as the Mediator

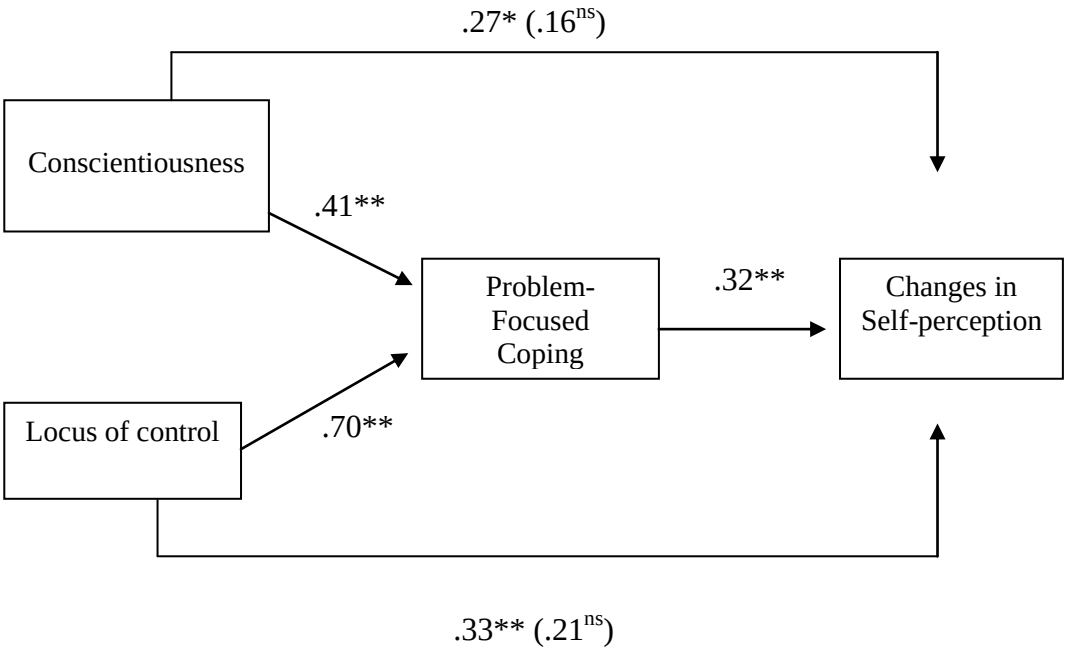
In terms of changes in philosophy of life, problem-focused coping did not mediate the relationship between conscientiousness and changes in philosophy of life. Although conscientiousness was a significant predictor of problem-focused coping (β = .41, p < .001) and problem-focused coping was a significant predictor of changes in philosophy of life (β = .20, p < .05), conscientiousness was not a predictor of changes in philosophy of life (β = .14, p = .14). The relationship between conscientiousness and changes in philosophy of life was not mediated by problem-focused coping, because the conditions of mediation were not met (Figure 10).



*Note. * p < .05, ** p < .001*

Figure 10. Conscientiousness – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Problem-focused Coping as the Mediator

In terms of changes in self-perception, the relationship between conscientiousness and changes in self-perception was mediated by problem-focused coping. Conscientiousness was a significant predictor of changes in self-perception (β = .27, p < .01) and problem-focused coping (β = .41, p < .001). Moreover, problem-focused coping was a significant predictor of changes in self-perception (β = .32, p < .001). The final condition of mediation was also met: The standardized regression coefficient between conscientiousness and changes in self-perception decreased significantly when controlling for problem-focused coping (from β = .27, p < .01 to β = .16, p = .10). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.85, p < .01). Therefore, problem-focused coping mediated the relationship between conscientiousness and changes in self-perception (See Figure 11).

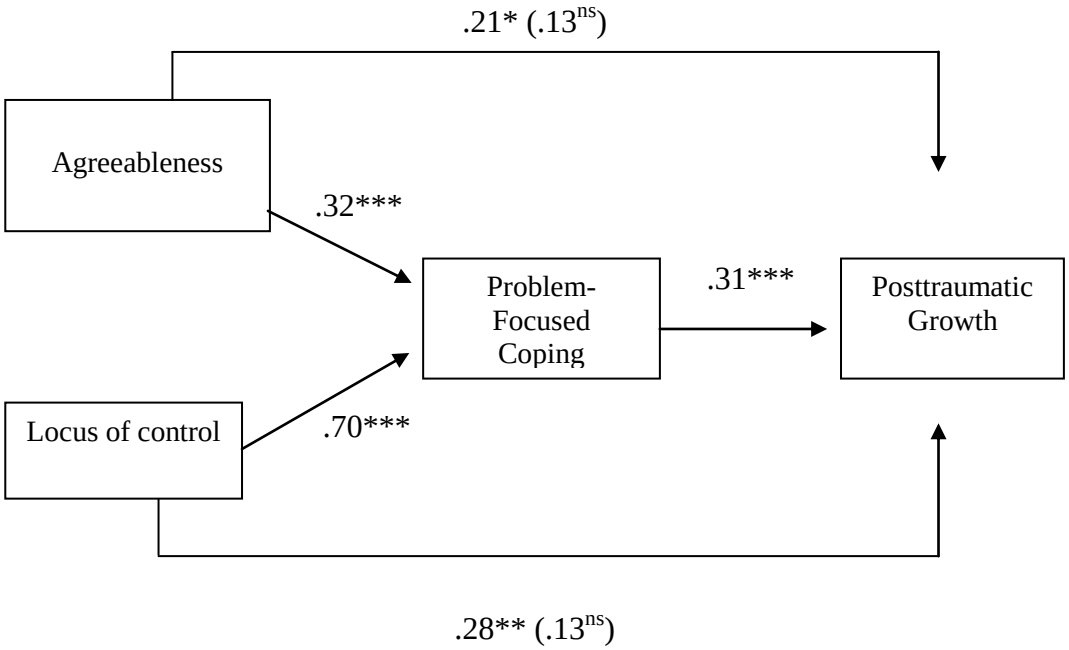


*Note. * p < .01, ** p < .001*

Figure 11. Conscientiousness – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Problem-focused Coping as the Mediator

Problem-focused coping mediated the relationship between agreeableness and posttraumatic growth. Agreeableness was a significant predictor of posttraumatic growth (β = .21, p < .05) and problem-focused coping (β = .32, p < .001). Problem-focused coping was a significant predictor of posttraumatic growth (β = .31, p < .001). The standardized regression coefficient between agreeableness and posttraumatic growth decreased significantly when controlling for problem-focused coping (from β = .21, p < .05 to β = .13, p = .18). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.45, p < .01). Therefore, the

relationship between agreeableness and posttraumatic growth was mediated by problem-focused coping (See Figure 12).

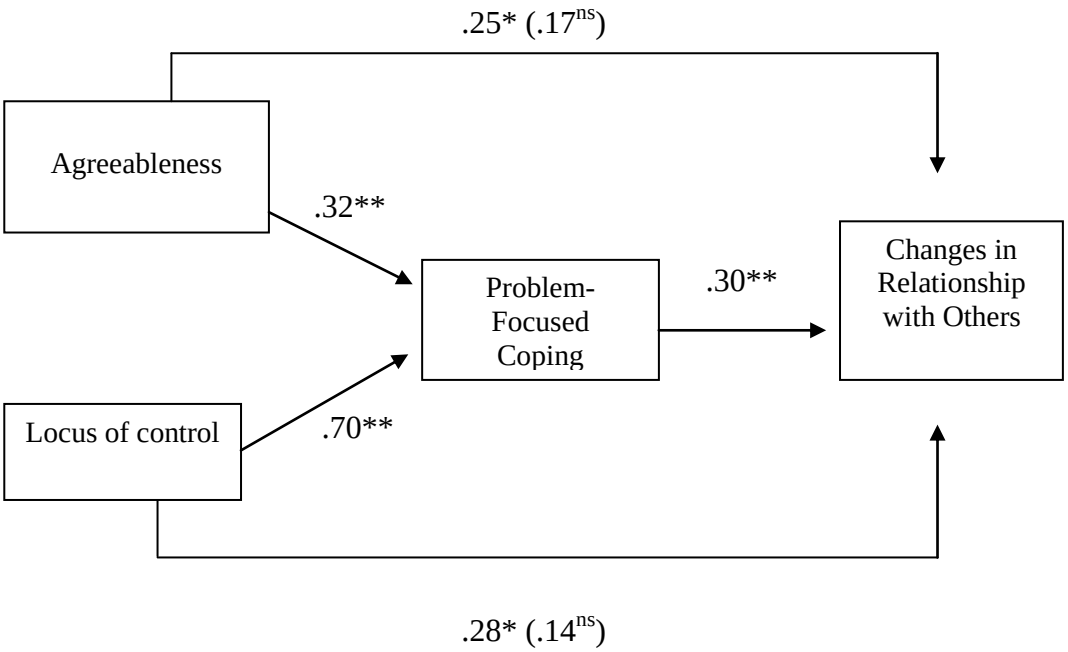


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 12. Agreeableness – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Problem-focused Coping as the Mediator

Problem-focused coping did also mediate the relationship between agreeableness and changes in relationship with others. Agreeableness was a significant predictor of changes in relationship with others (β = .25, p < .01) and problem-focused coping (β = .32, p < .001). Problem-focused coping was a significant predictor of changes in relationship with others (β = .30, p < .001). The

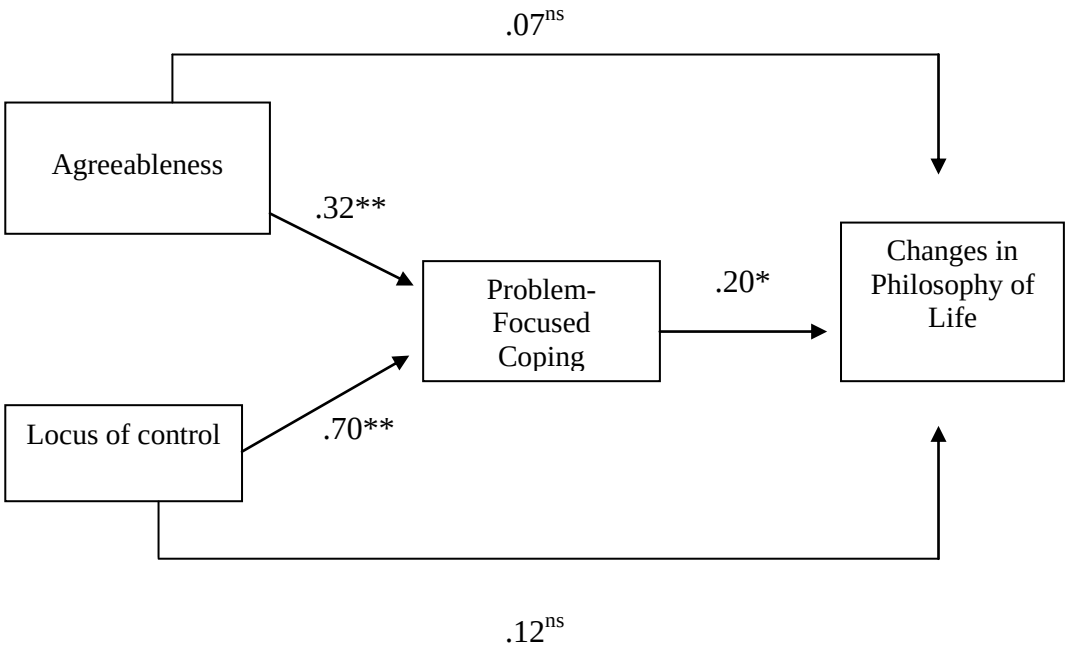
standardized regression coefficient between agreeableness and changes in relationship with others decreased significantly when controlling for problem-focused coping (from β = .25, p < .01 to β = .17, p = .08). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.40, p < .05). Therefore, the relationship between agreeableness and changes in relationship with others was mediated by problem-focused coping (See Figure 13).



*Note. * p < .01, ** p < .001*

Figure 13. Agreeableness – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Problem-focused Coping as the Mediator

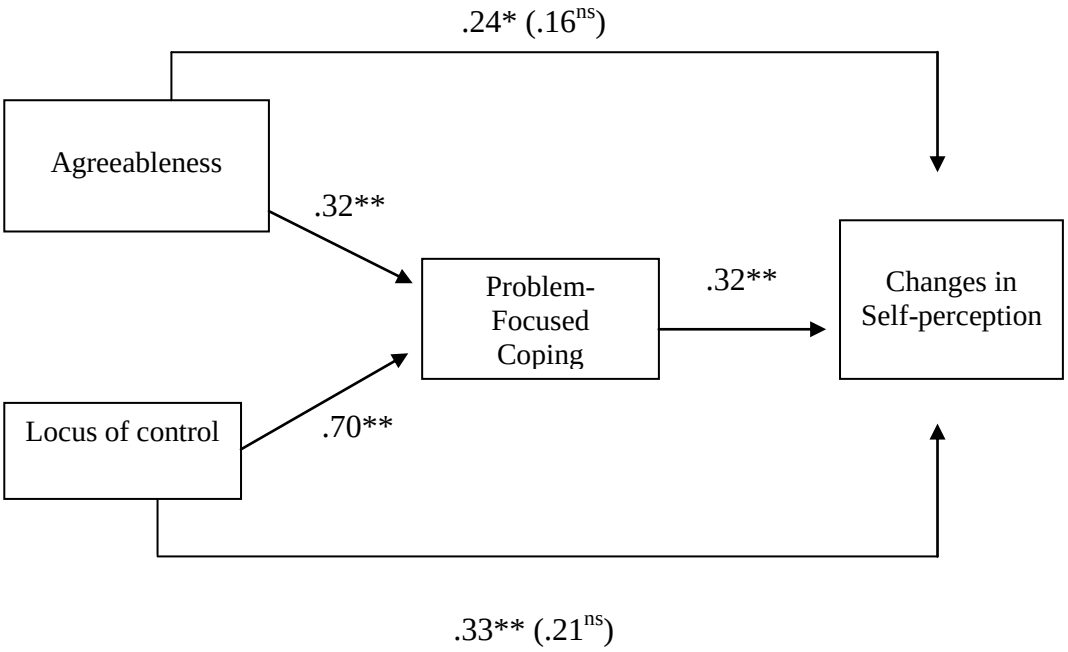
Problem-focused coping did not mediate the relationship between agreeableness and changes in philosophy of life. Agreeableness was a significant predictor of problem-focused coping (β = .32, p < .001) and problem-focused coping was a significant predictor of changes in philosophy of life (β = .20, p < .05). However, agreeableness was not a significant predictor of changes in philosophy of life (β = .07, p = .48). Therefore, the relationship between agreeableness and changes in philosophy of life was not mediated by problem-focused coping since the conditions of mediation was not fulfilled (See Figure 14).



*Note. * p < .05, ** p < .001*

Figure 14. Agreeableness – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Problem-focused Coping as the Mediator

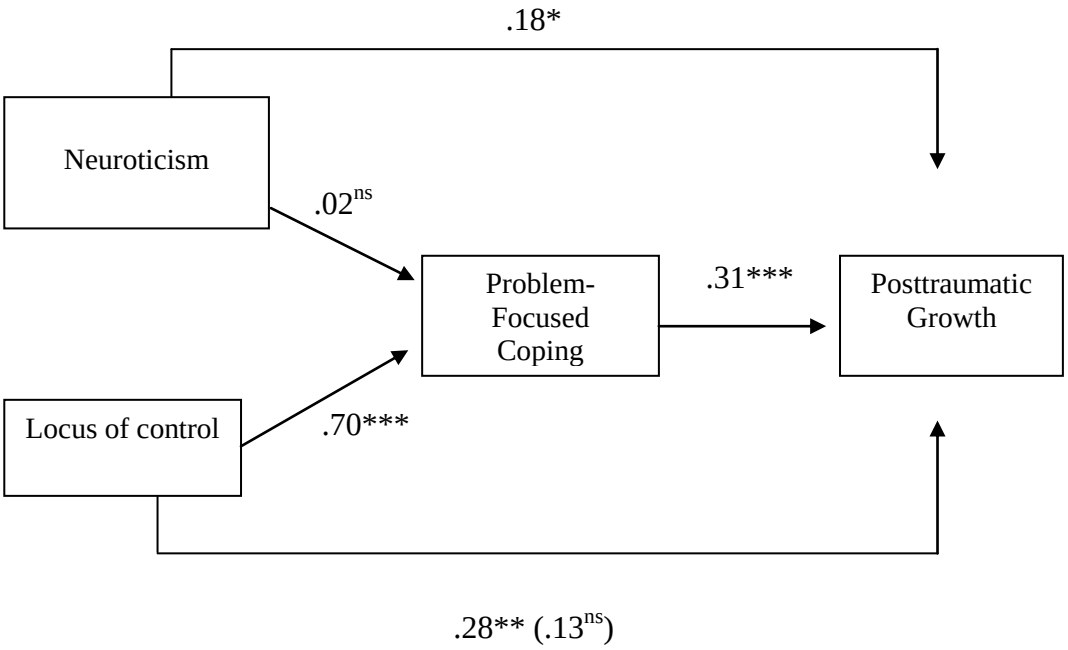
The relationship between agreeableness and changes in self-perception was mediated by problem-focused coping. Agreeableness was a significant predictor of changes in self-perception (β = .24, p < .01) and problem-focused coping (β = .32, p < .001). Moreover, problem-focused coping was a significant predictor of changes in self-perception (β = .32, p < .001). The final condition of mediation was also met: The standardized regression coefficient between agreeableness and changes in self-perception decreased significantly when controlling for problem-focused coping (from β = .24, p < .01 to β = .16, p = .10). The mediating role of problem-focused coping between agreeableness and changes in self-perception was confirmed by Sobel test (Sobel z = 2.52, p < .05). Therefore, problem-focused coping mediated the relationship agreeableness and changes in self-perception (See Figure 15).



*Note. * p < .01, ** p < .001*

Figure 15. Agreeableness – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Problem-focused Coping as the Mediator

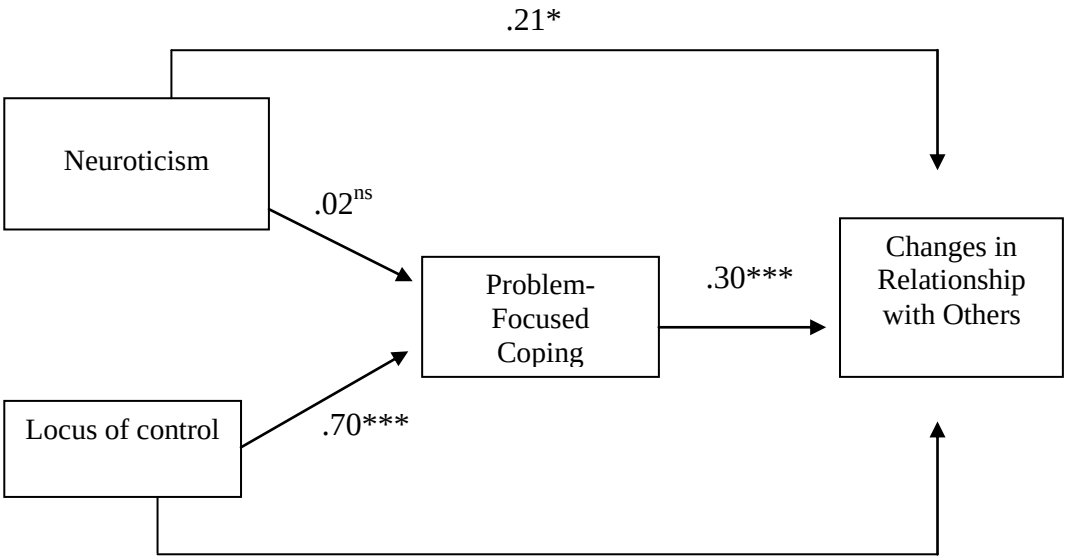
The relationship between neuroticism and posttraumatic growth was not mediated by problem-focused coping, because the conditions of mediation were not fulfilled. Neuroticism was marginally significant predictor of posttraumatic growth (β = .18, p = .052). Moreover, problem-focused coping was a significant predictor of posttraumatic growth (β = .31, p < .001). However, neuroticism was not a significant predictor of problem-focused coping (β = .02, p = .86). Therefore, problem-focused coping did not mediate the relationship between neuroticism and posttraumatic growth (See Figure 16).



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

Figure 16. Neuroticism – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Problem-focused Coping as the Mediator

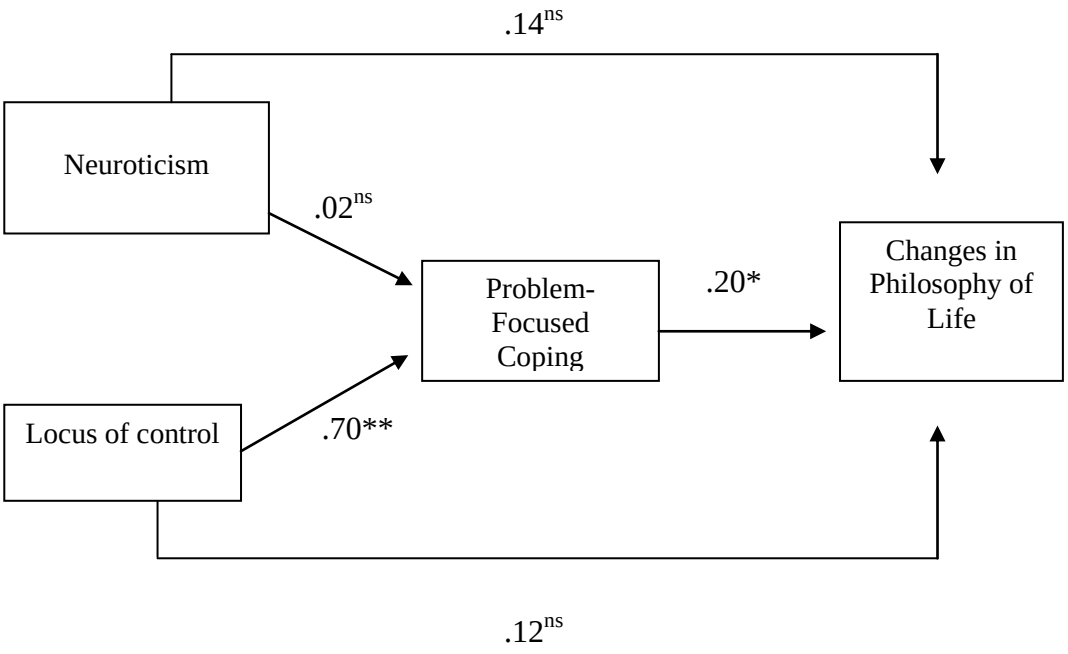
Problem-focused coping did not mediate the relationship between neuroticism and changes in relationship with others, because the conditions of mediation were not fulfilled. Neuroticism was a significant predictor of changes in relationship with others (β = .21, p < .05). Moreover, problem-focused coping was a significant predictor of changes in relationship with others (β = .30, p < .001). However, neuroticism was not a significant predictor of problem-focused coping (β = .02, p = .86). Therefore, the relationship between neuroticism and changes in relationship with others was not mediated by problem-focused coping (See Figure 17).



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

Figure 17. Neuroticism – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Problem-focused Coping as the Mediator

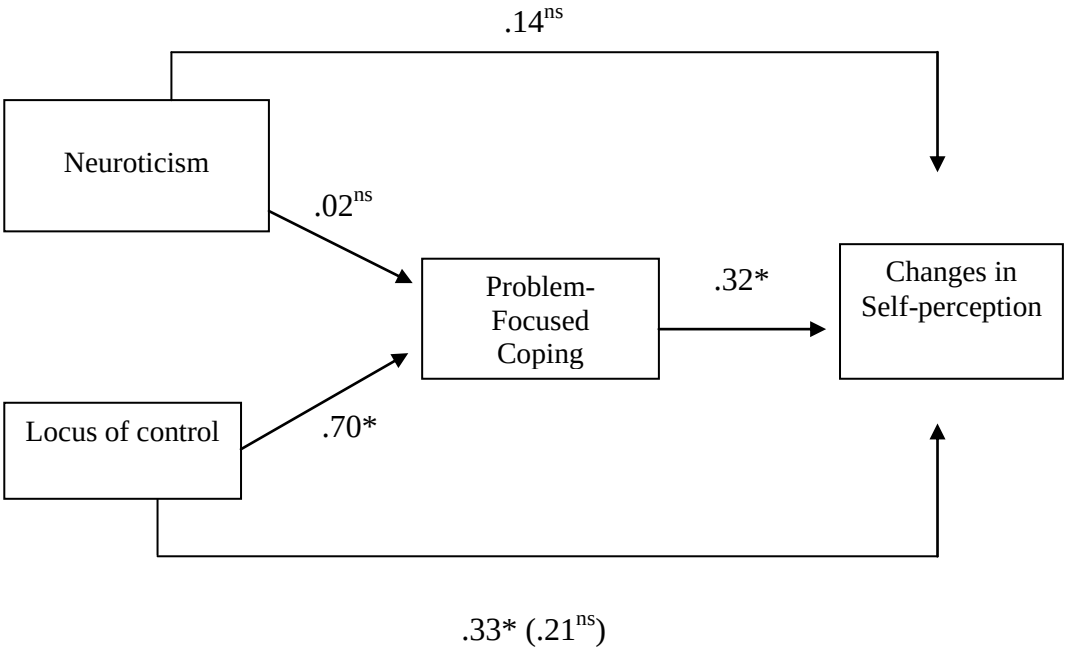
Problem-focused coping did not mediate the relationship between neuroticism and changes in philosophy of life. Neuroticism was not a significant predictor of problem-focused coping (β = .02, p = .86). Moreover, it was not a significant predictor of changes in philosophy of life (β = .14, p = .14). The relationship between neuroticism and changes in philosophy of life was not mediated by problem-focused coping since the conditions of mediation were not fulfilled (See Figure 18).



*Note. * $p < .05$, ** $p < .001$*

Figure 18. Neuroticism – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Problem-focused Coping as the Mediator

Problem-focused coping did not mediate the relationship between neuroticism and changes in self-perception. Neuroticism was not a significant predictor of problem-focused coping (β = .02, p = .86). Moreover, it was not a significant predictor of changes in self-perception (β = .14, p = .13). Therefore, the relationship between neuroticism and changes in self-perception was not mediated by problem-focused coping since the conditions of mediation were not fulfilled (See Figure 19).

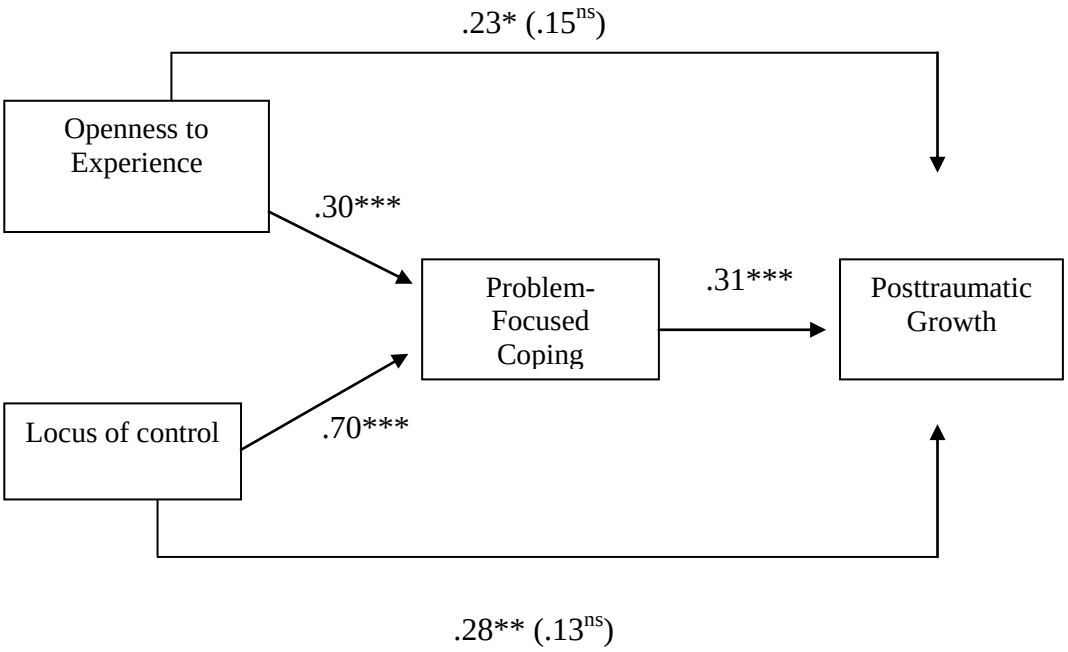


*Note. * $p < .001$*

Figure 19. Neuroticism – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Problem-focused Coping as the Mediator

Problem-focused coping mediated the relationship between openness to experience and posttraumatic growth. Openness to experience was a significant predictors of both posttraumatic growth (β = .23, p < .05) and problem-focused coping (β = .30, p < .001). Problem-focused coping was a significant predictor of posttraumatic growth (β = .31, p < .001). The standardized regression coefficient between openness to experience and posttraumatic growth decreased significantly when controlling for problem-focused coping (from β = .23, p < .05 to β = .15, p = .11). The mediating role of problem-focused coping was confirmed by Sobel test

(Sobel $z = 2.40$, $p < .05$). Therefore, the relationship between openness to experience and posttraumatic growth was mediated by problem-focused coping (See Figure 20).

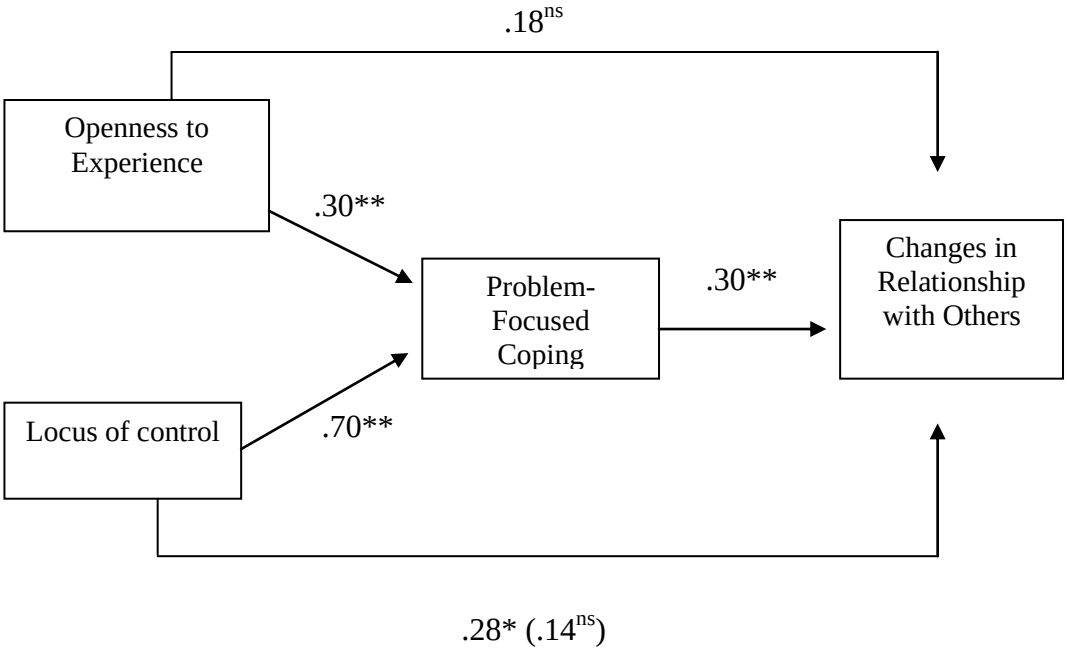


*Note. * $p < .05$, ** $p < .01$, *** $p < .001$*

Figure 20. Openness to Experience – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Problem-focused Coping as the Mediator

The relationship between openness to experience and changes in relationship with others was not mediated by problem-focused coping. Openness to experience was a significant predictor of problem-focused coping ($\beta = .30$, $p < .001$). Moreover, problem-focused coping was a significant predictor of changes in relationship with others ($\beta = .30$, $p < .001$). However, openness to experience was not a significant

predictor of changes in relationship with others (β = .18, p = .06). Therefore, problem-focused coping did not mediate the relationship between openness to experience and changes in relationship with others since the conditions of mediation were not fulfilled (See Figure 21).

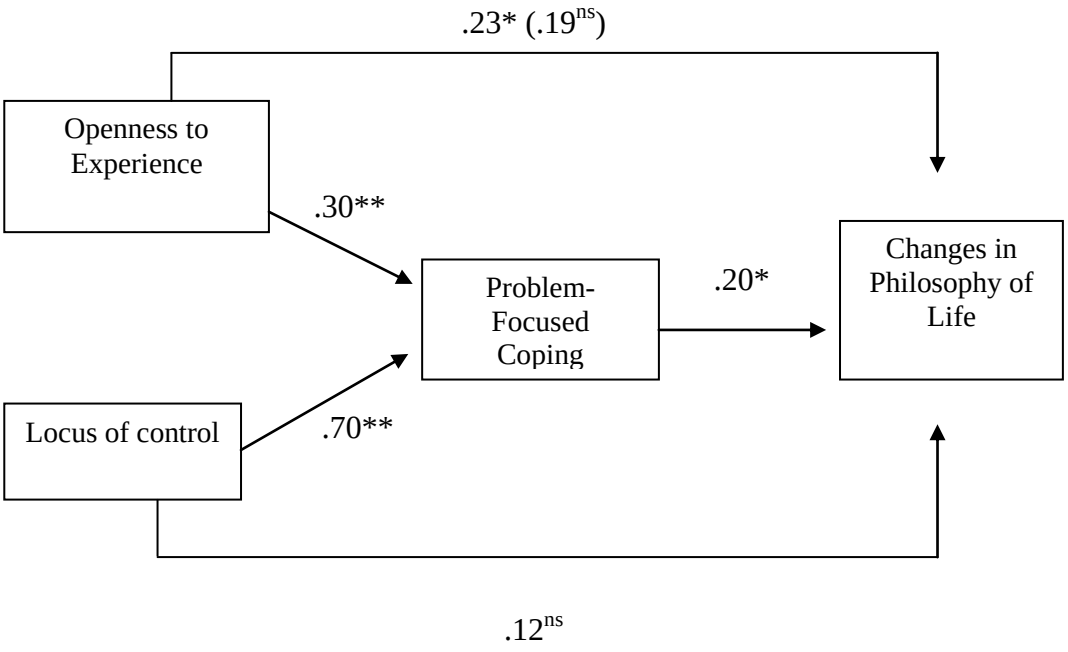


*Note. * p < .01, ** p < .001*

Figure 21. Openness to Experience – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Problem-focused Coping as the Mediator

The relationship between openness to experience and changes in philosophy of life was mediated by problem-focused coping. Openness to experience was a significant predictor of both changes in philosophy of life (β = .23, p < .05) and

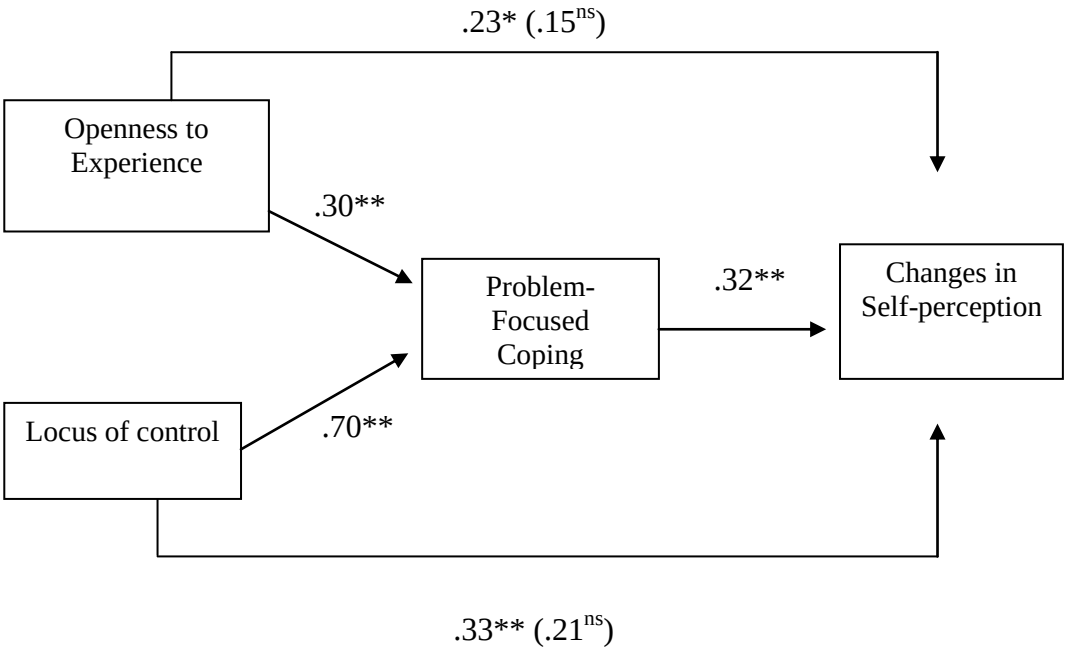
problem-focused coping (β = .30, p < .001). Moreover, problem-focused coping was a significant predictor of changes in philosophy of life (β = .20, p < .05). The standardized regression coefficient between openness to experience and changes in philosophy of life decreased significantly when controlling for problem-focused coping (from β = .23, p < .05 to β = .19, p = .06) Therefore, problem-focused coping mediated the relationship between openness to experience and changes in relationship with others (See Figure 22).



*Note. * p < .05, ** p < .001*

Figure 22. Openness to Experience – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Problem-focused Coping as the Mediator

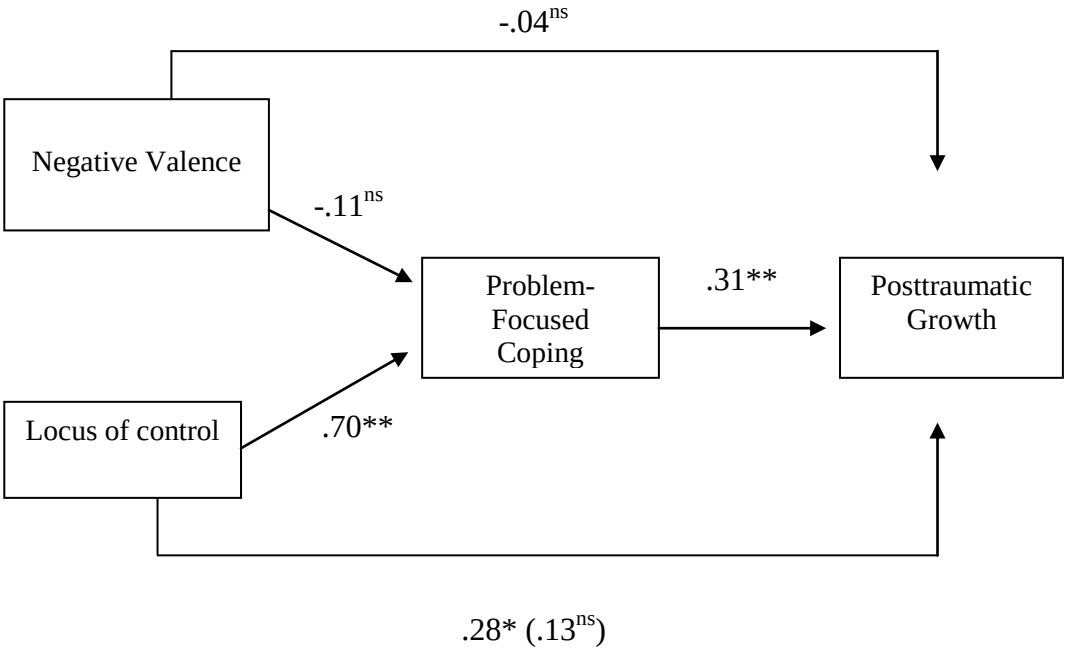
Problem-focused coping did also mediate the relationship between openness to experience and changes in self-perception. Openness to experience was a significant predictors of both changes in self-perception (β = .23, p < .05) and problem-focused coping (β = .30, p < .001). Problem-focused coping was a significant predictor of changes in self-perception (β = .32, p < .001). The standardized regression coefficient between openness to experience and changes in self-perception decreased significantly when controlling for problem-focused coping (from β = .23, p < .05 to β = .15, p = .12). The mediating role of problem-focused coping was confirmed by Sobel test (Sobel z = 2.46, p < .05). Therefore, the relationship between openness to experience and changes in self-perception was mediated by problem-focused coping (See Figure 23).



*Note. * p < .05, ** p < .001*

Figure 23. Openness to Experience – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Problem-focused Coping as the Mediator

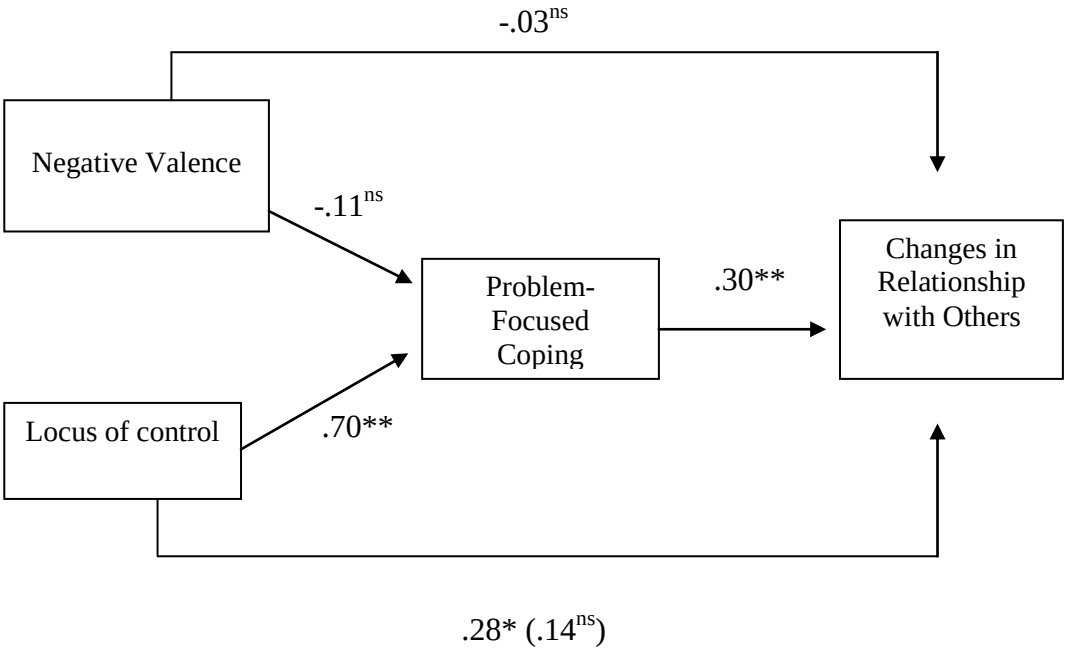
Problem-focused coping did not mediate the relationship between negative valence and posttraumatic growth. Negative valence was not a significant predictor of problem-focused coping (β = -.11, p = .25) and posttraumatic growth (β = -.04, p = .70). The relationship between negative valence and posttraumatic growth was not mediated by problem-focused coping since the conditions of mediation were not fulfilled (See Figure 24).



*Note. * $p < .01$, ** $p < .001$*

Figure 24. Negative Valence – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Problem-focused Coping as the Mediator

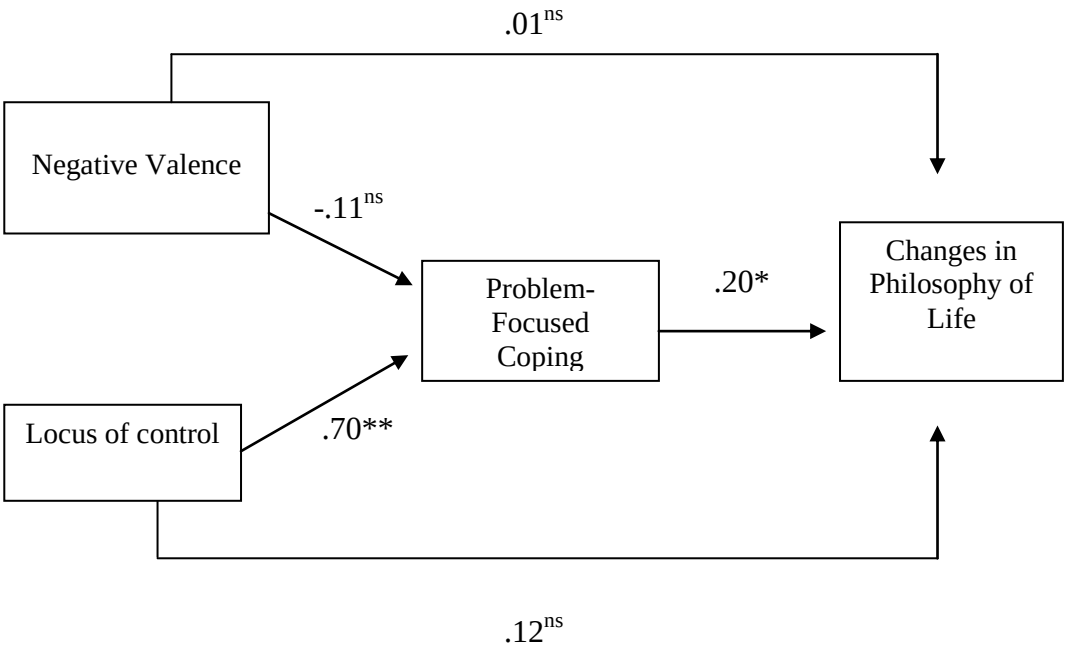
Problem-focused coping did not mediate the relationship between negative valence and changes in relationship with others. Negative valence was not a significant predictor of problem-focused coping (β = -.11, p = .25). Moreover, it was not a significant predictor of changes in relationship with others (β = -.03, p = .79). The relationship between negative valence and changes in relationship with others was not mediated by problem-focused coping, because the conditions of mediation were not fulfilled (See Figure 25).



*Note. * p < .01, ** p < .001*

Figure 25. Negative Valence – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Problem-focused Coping as the Mediator

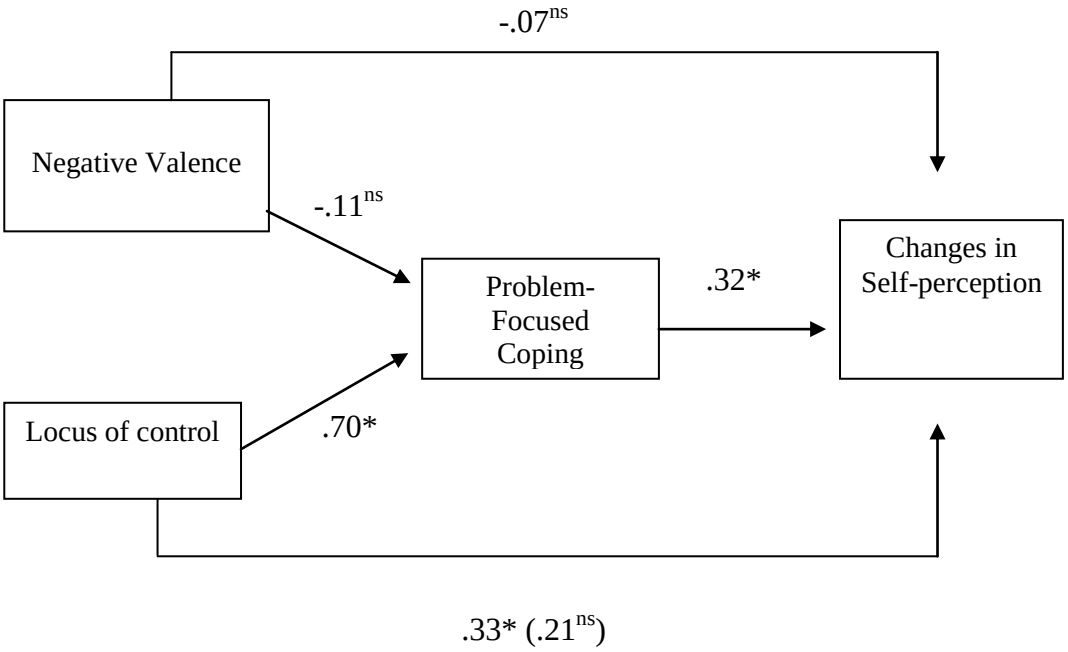
Problem-focused coping did not mediate the relationship between negative valence and changes in philosophy of life. Negative valence was not a significant predictor of problem-focused coping (β = -.11, p = .25). Moreover, it was not a significant predictor of changes in philosophy of life (β = .01, p = .92). The relationship between negative valence and changes in philosophy of life was not mediated by problem-focused coping, because the conditions of mediation were not fulfilled (See Figure 26).



*Note. * p < .05, ** p < .001*

Figure 26. Negative Valence – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Problem-focused Coping as the Mediator

Problem-focused coping did not mediate the relationship between negative valence and changes in self-perception. Negative valence was not a significant predictor of problem-focused coping (β = -.11, p = .25). Moreover, it was not a significant predictor of changes in self-perception (β = -.07, p = .44). The relationship between negative valence and changes in self-perception was not mediated by problem-focused coping, because the conditions of mediation were not fulfilled (See Figure 27).



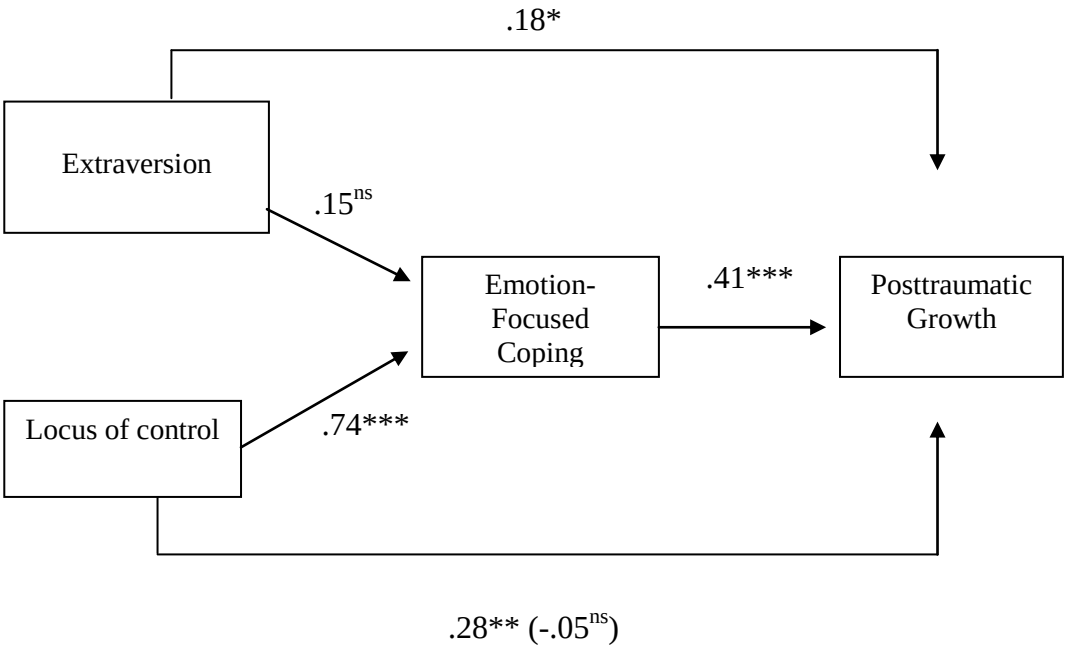
*Note. * $p < .001$*

Figure 27. Negative Valence – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Problem-focused Coping as the Mediator

3.4.1.2. Emotion-focused coping as Mediator

The relationship between extraversion and posttraumatic growth was not mediated by emotion-focused coping. Although both extraversion (marginally, β = .18, p = .052) and emotion-focused coping (β = .41, $p < .001$) were significant predictors of posttraumatic growth, extraversion was not a predictor of emotion-focused coping (β = .15, p = .10). Therefore, the conditions of mediation were not fulfilled and emotion-focused coping did not mediate the relationship between extraversion and posttraumatic growth (See Figure 28).

Similarly, emotion-focused coping mediated the relationship between locus of control and posttraumatic growth. Locus of control was a significant predictor of posttraumatic growth (β = .28, p < .01) and emotion-focused coping (β = .74, p < .001). Moreover, emotion-focused coping was also a significant predictor of posttraumatic growth (β = .41, p < .001). The final condition of mediation was also met: The standardized regression coefficient between locus of control and posttraumatic growth decreased significantly (from β = .28, p < .01 to β = -.05, p = .69). The mediating role of emotion-focused coping between locus of control and posttraumatic growth was confirmed by Sobel test (Sobel z = 4.35, p < .001). Therefore, emotion-focused coping mediate the relationship between locus of control and posttraumatic growth (See Figure 28).

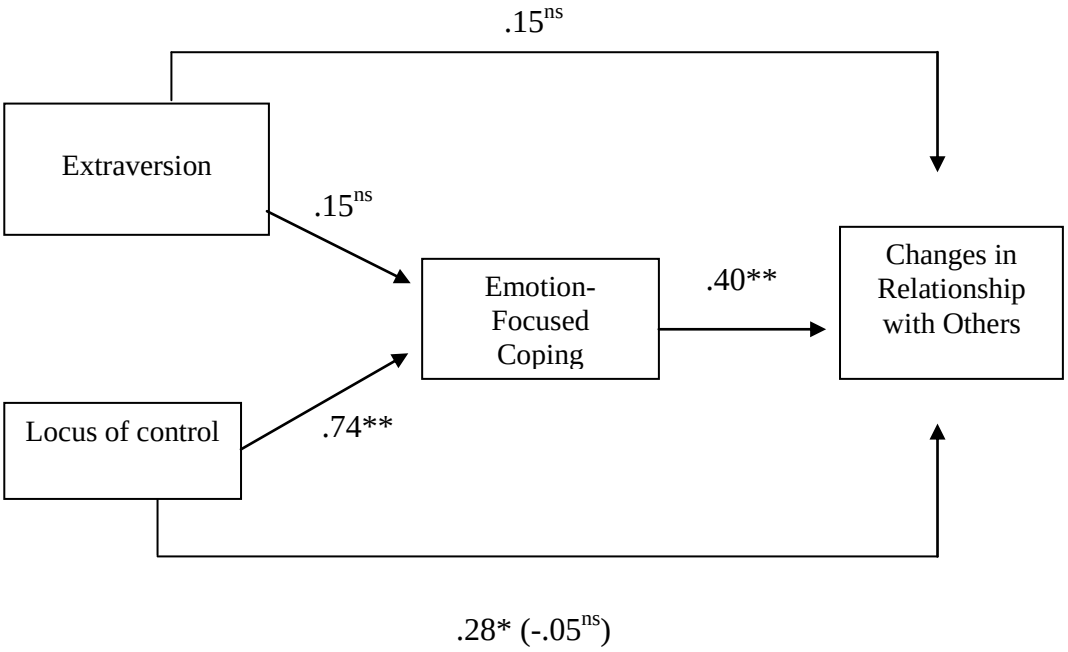


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 28. Extraversion – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Emotion-focused Coping as the Mediator

In addition to posttraumatic growth, its factors that are changes in relationship with others, changes in philosophy of life, and changes in self-perception were also used as dependent variables. In terms of changes in relationship with others, extraversion was not a significant predictor of emotion-focused coping (β = .15, p = .10). Moreover, it was not a significant predictor of changes in relationship with others (β = .15, p = .11). Therefore, the relationship between extraversion and changes in relationship with others was not mediated by emotion-focused coping (See Figure 29).

Emotion-focused coping did also mediate the relationship between locus of control and changes in relationship with others. Locus of control was a significant predictor of changes in relationship with others (β = .28, p < .01) and emotion-focused coping (β = .74, p < .001). Moreover, emotion-focused coping was also a significant predictor of changes in relationship with others (β = .40, p < .001). The final condition of mediation was also met: The standardized regression coefficient between locus of control and changes in relationship with others decreased significantly when controlling for emotion-focused coping (from β = .28, p < .01 to β = -.05, p = .70). The mediating role of emotion-focused coping between locus of control and changes in relationship with others was confirmed by Sobel test (Sobel z = 4.34, p < .001). Therefore, emotion-focused coping was a mediator of the relationship between locus of control and changes in relationship with others (See Figure 29).



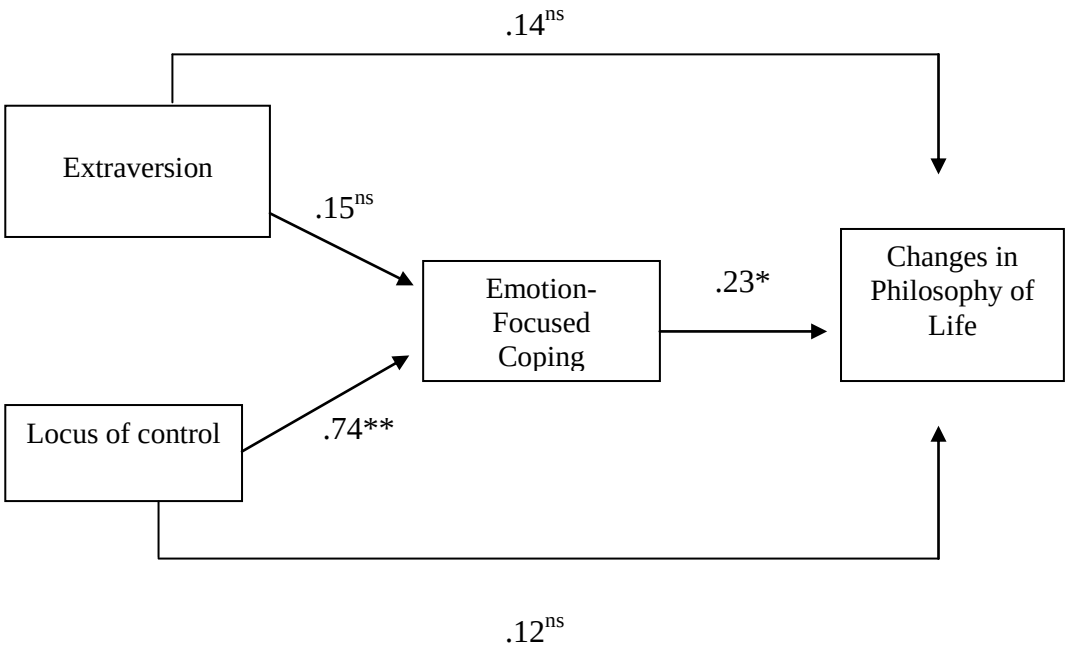
*Note. * p < .01, ** p < .001*

Figure 29. Extraversion – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Emotion-focused Coping as the Mediator

In terms of changes in philosophy of life, extraversion was not a significant predictor of emotion-focused coping (β = .15, p = .10). Moreover, it was not a significant predictor of changes in philosophy of life (β = .14, p = .15). Hence, the relationship between extraversion and changes in philosophy of life was not mediated by emotion-focused coping (See Figure 30).

Locus of control was a significant variable of emotion-focused coping (β = .74, p < .001) and emotion-focused coping was a significant predictor of changes in philosophy of life (β = .23, p < .05). On the other hand, locus of control was not a

predictor of changes in philosophy of life (β = .12, p = .21). The relationship between locus of control and changes in philosophy of life was not mediated by emotion-focused coping since the conditions of mediation were not fulfilled (See Figure 30).



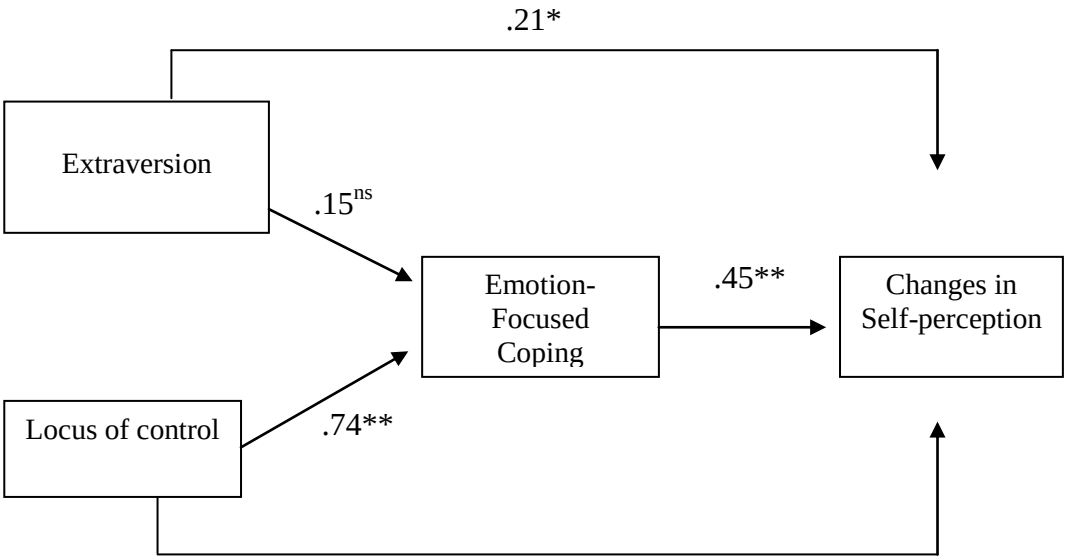
*Note. * $p < .05$, ** $p < .001$*

Figure 30. Extraversion – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Emotion-focused Coping as the Mediator

In terms of changes in self-perception, the relationship between extraversion and changes in self-perception was not mediated by emotion-focused coping. Although both extraversion (β = .21, $p < .05$) and emotion-focused coping (β = .45, p

< .001) were predictors of changes in self-perception, extraversion was not a predictor of emotion-focused coping (β = .15, p = .10). The relationship between extraversion and changes in self-perception was not mediated by emotion-focused coping, because the conditions of mediation were not fulfilled (See Figure 31).

Emotion-focused coping mediated the relationship between locus of control and changes in self-perception. Locus of control was a significant predictor of changes in self-perception (β = .33, p < .001) and emotion-focused coping (β = .74, p < .001). Moreover, emotion-focused coping was also a significant predictor of changes in self-perception (β = .45, p < .001). The final condition of mediation was also met: The standardized regression coefficient between locus of control and changes in self-perception decreased significantly when controlling for emotion-focused coping (from β = .33, p < .001 to β = .01, p = .97). The mediating role of emotion-focused coping between locus of control and changes in self-perception was confirmed by Sobel test (Sobel z = 4.78, p < .001). Therefore, emotion-focused coping was a mediator of the relationship between locus of control and changes in self-perception (See Figure 31).

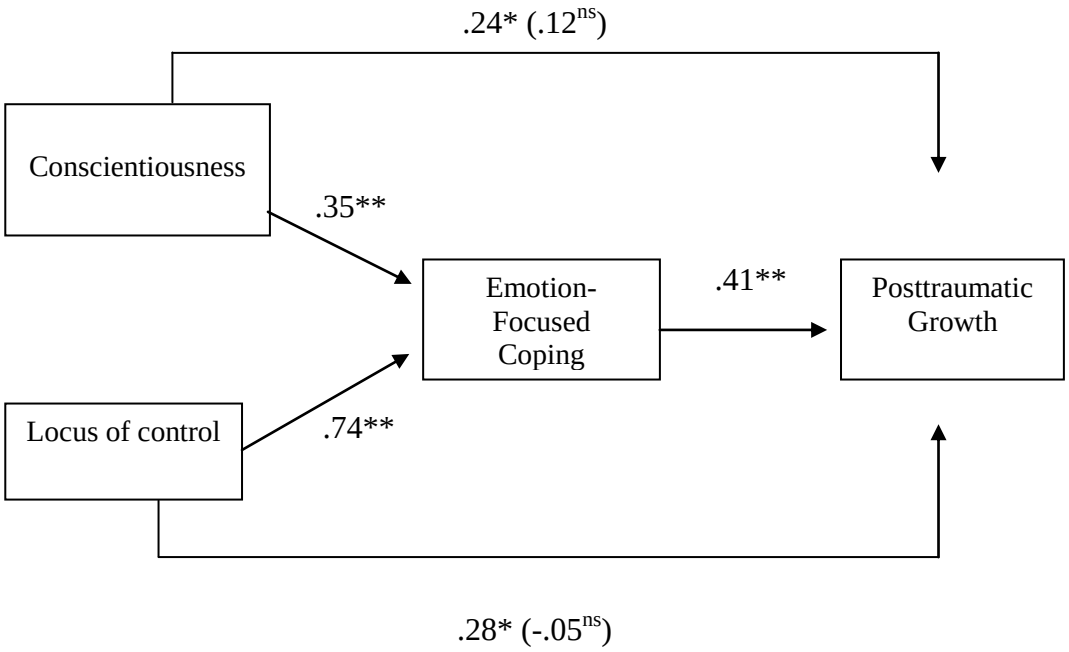


*Note. * $p < .05$, ** $p < .001$*

Figure 31. Extraversion – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Emotion-focused Coping as the Mediator

The relationship between conscientiousness and posttraumatic growth was mediated by emotion-focused coping. Conscientiousness was a significant predictor of posttraumatic growth ($\beta = .24$, $p < .01$) and emotion-focused coping ($\beta = .35$, $p < .001$). Emotion-focused coping was a significant predictor of posttraumatic growth ($\beta = .41$, $p < .001$). The final condition of mediation was also met: The standardized regression coefficient between conscientiousness and posttraumatic growth decreased significantly when controlling for emotion-focused coping (from $\beta = .24$, $p < .01$ to $\beta = .12$, $p = .21$). The mediating role of emotion-focused coping between conscientiousness and posttraumatic growth was confirmed by Sobel test (Sobel $z =$

3.01, $p < .01$). Therefore, emotion-focused coping mediated the relationship between conscientiousness and posttraumatic growth (See Figure 32).

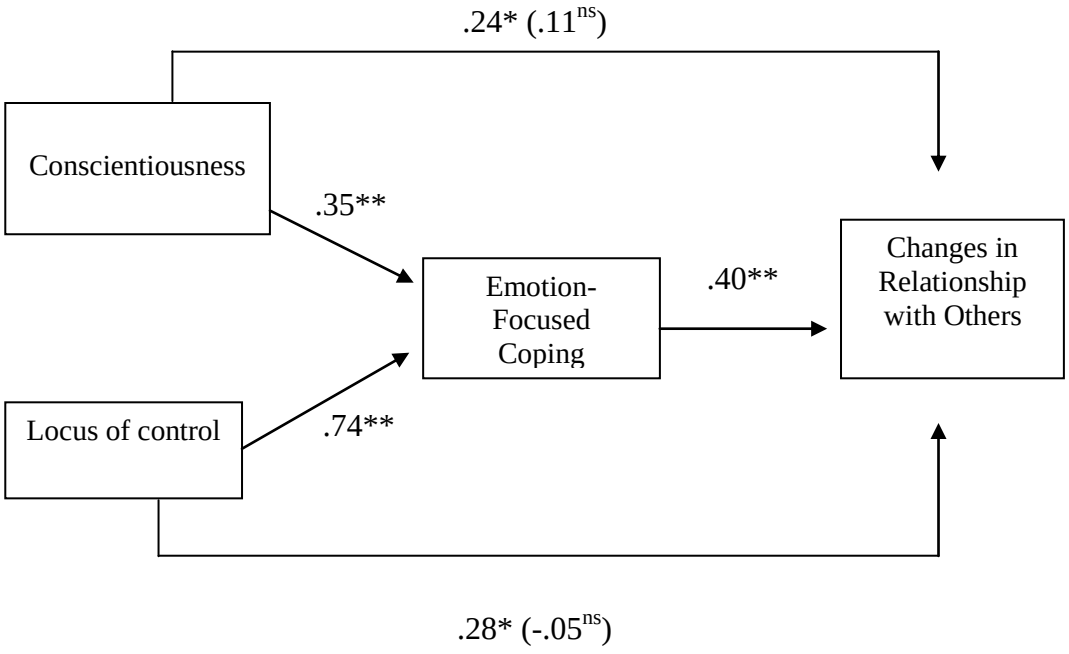


*Note. * $p < .01$, ** $p < .001$*

Figure 32. Conscientiousness – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Emotion-focused Coping as the Mediator

Emotion- focused coping mediated the relationship between conscientiousness and changes in relationship with others. Conscientiousness was a significant predictor of changes in relationship with others ($\beta = .24$, $p < .01$) and emotion-focused coping ($\beta = .35$, $p < .001$). Moreover, emotion-focused coping was a significant predictor of changes in relationship with others ($\beta = .40$, $p < .001$). The

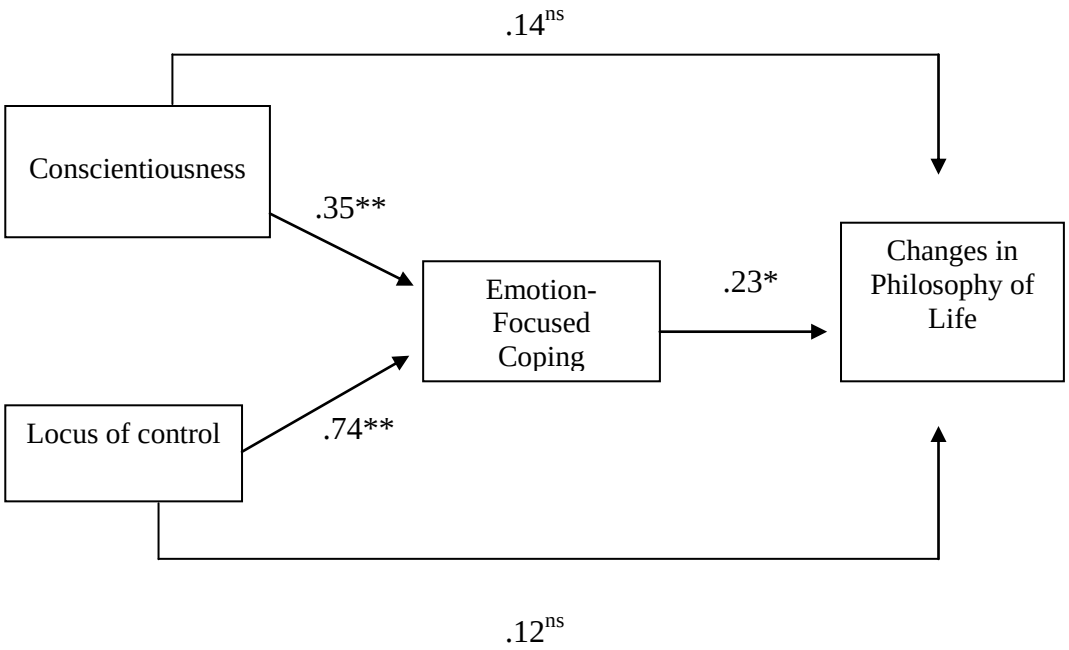
final condition of mediation was also met: The standardized regression coefficient between conscientiousness and changes in relationship with others decreased significantly when controlling for emotion-focused coping (from $\beta = .24$, $p < .01$ to $\beta = .11$, $p = .22$). The mediating role of emotion-focused coping between conscientiousness and changes in relationship with others was confirmed by Sobel test (Sobel $z = 3.01$, $p < .01$). Therefore, the relationship between conscientiousness and changes in relationship with others was mediated by emotion-focused coping (See Figure 33).



*Note. * p < .01, ** p < .001*

Figure 33. Conscientiousness – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Emotion-focused Coping as the Mediator

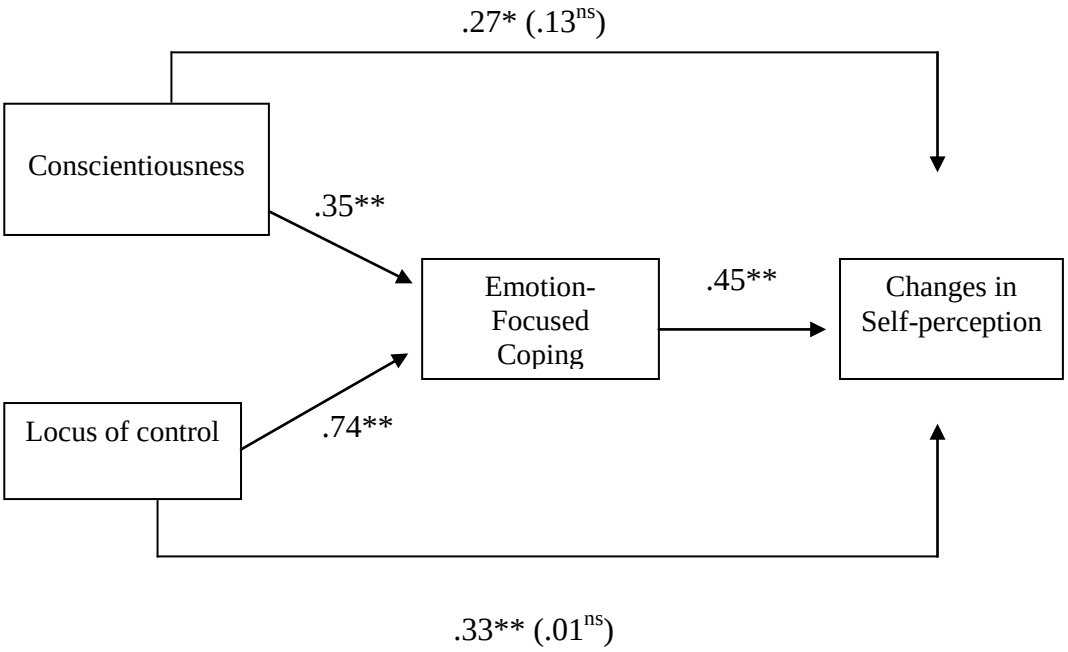
The relationship between conscientiousness and changes in philosophy of life was not mediated by emotion-focused coping. Although conscientiousness was a significant predictor of emotion-focused coping (β = .35, p < .001) and emotion-focused coping was a significant predictor of changes in philosophy of life (β = .23, p < .05), conscientiousness was not a significant predictor of changes in philosophy of life (β = .14, p = .14). Emotion-focused coping did not mediate the relationship between conscientiousness and changes in philosophy of life since the conditions of mediation were not fulfilled (See Figure 34).



*Note. * p < .05, ** p < .001*

Figure 34. Conscientiousness – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Emotion-focused Coping as the Mediator

The relationship between conscientiousness and changes in self-perception was mediated by emotion-focused coping. Conscientiousness was a significant predictor of changes in self-perception (β = .27, p < .01) and emotion-focused coping (β = .35, p < .001). Emotion-focused coping was a significant predictor of changes in self-perception (β = .45, p < .001). The final condition of mediation was also met: The standardized regression coefficient between conscientiousness and changes in self-perception decreased significantly when controlling for emotion-focused coping (from β = .27, p < .01 to β = .13, p = .16). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel z = 3.14, p < .01). Therefore, emotion-focused coping mediated the relationship between conscientiousness and changes in self-perception (See Figure 35).

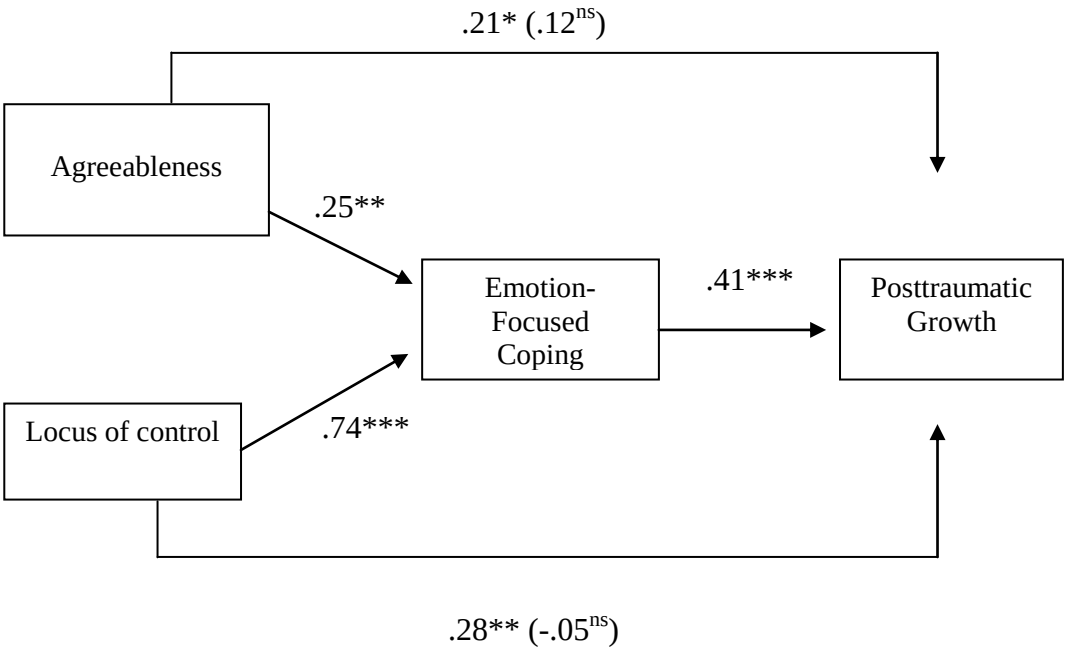


*Note. * p < .01, ** p < .001*

Figure 35. Conscientiousness – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Emotion-focused Coping as the Mediator

Emotion-focused coping did also mediate the relationship between agreeableness and posttraumatic growth. Agreeableness was a significant predictor of posttraumatic growth (β = .21, p < .05) and emotion-focused coping (β = .25, p < .01). Emotion-focused coping was a significant predictor of posttraumatic growth (β = .41, p < .001). The standardized regression coefficient between agreeableness and posttraumatic growth decreased significantly when controlling for emotion-focused coping (from β = .21, p < .05 to β = .12, p = .18). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel z = 2.34, p < .05). Therefore, the

relationship between agreeableness and posttraumatic growth was mediated by emotion-focused coping (See Figure 36).

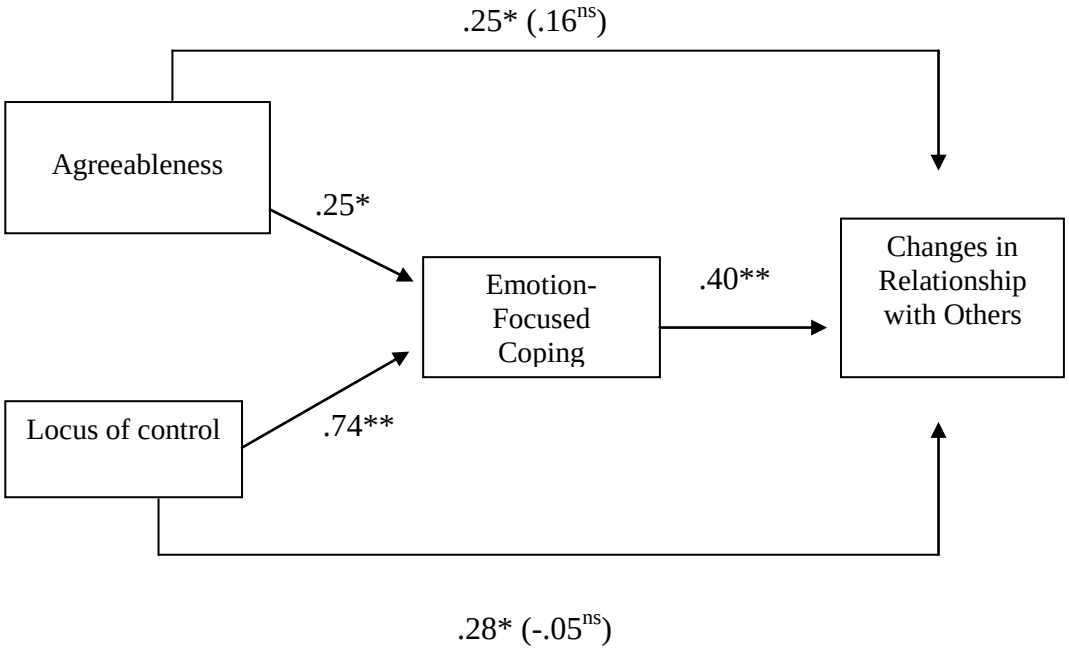


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 36. Agreeableness – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Emotion-focused Coping as the Mediator

The relationship between agreeableness and changes in relationship with others was mediated by emotion-focused coping. Agreeableness was a significant predictor of changes in relationship with others (β = .25, p < .01) and emotion-focused coping (β = .25, p < .01). Emotion-focused coping was a significant predictor of changes in relationship with others (β = .40, p < .001). The final

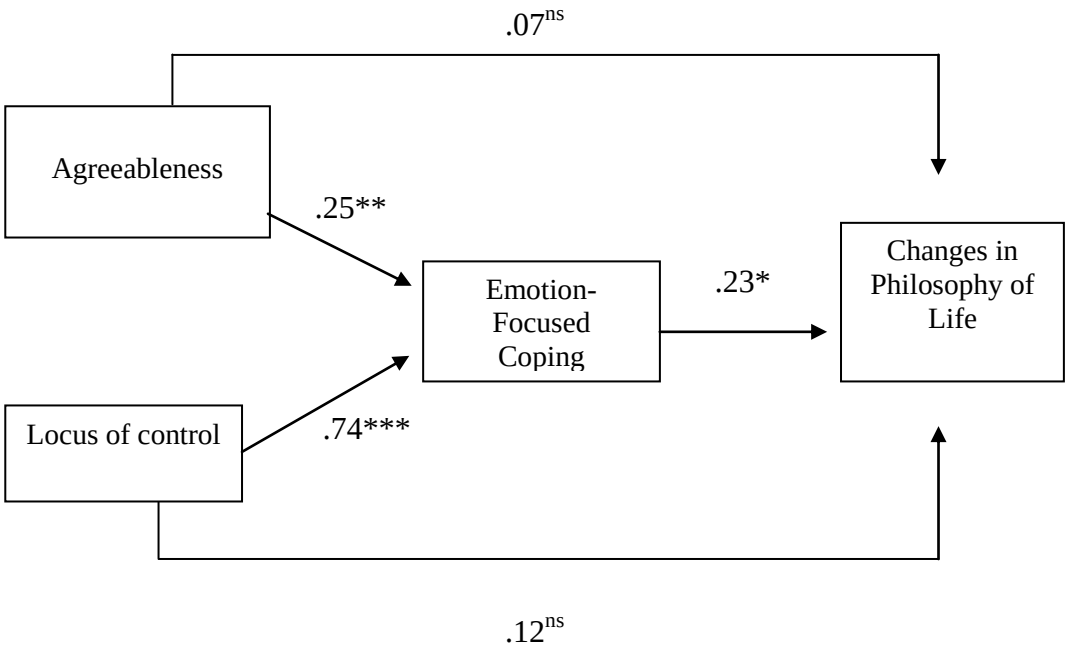
condition of mediation was also met: The standardized regression coefficient between agreeableness and changes in relationship with others decreased significantly when controlling for emotion-focused coping (from $\beta = .25$, $p < .01$ to $\beta = .16$, $p = .08$). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel $z = 2.34$, $p < .05$). Therefore, emotion-focused coping mediated the relationship between agreeableness and changes in relationship with others (See Figure 37).



*Note. * p < .01, ** p < .001*

Figure 37. Agreeableness – Changes in Relationship With Others and Locus of Control – Changes in Relationship with Others Having Relationships Emotion-focused Coping as the Mediator

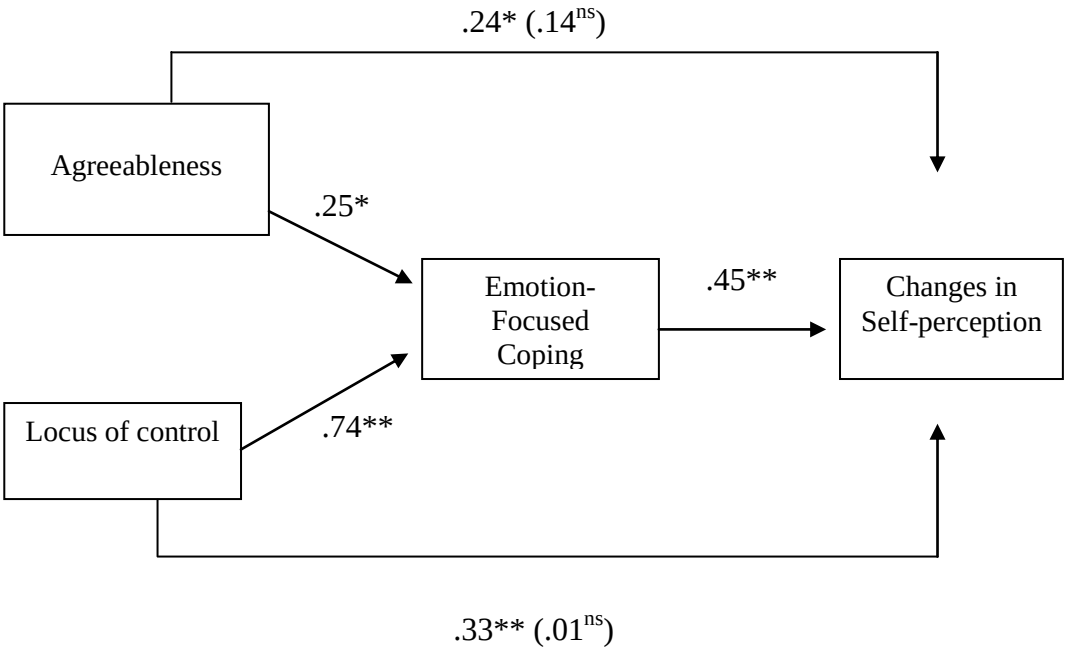
The relationship between agreeableness and changes in philosophy of life was not mediated by emotion-focused coping. Although agreeableness was a significant predictor of emotion-focused coping (β = .25, p < .01) and emotion-focused coping was a significant predictor of changes in philosophy of life (β = .23, p < .05), agreeableness was not a significant predictor of changes in philosophy of life (β = .07, p = .48). Therefore, emotion-focused coping did not mediate the relationship between agreeableness and changes in philosophy of life since the conditions of mediation were not fulfilled (See Figure 38).



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

Figure 38. Agreeableness – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Emotion-focused Coping as the Mediator

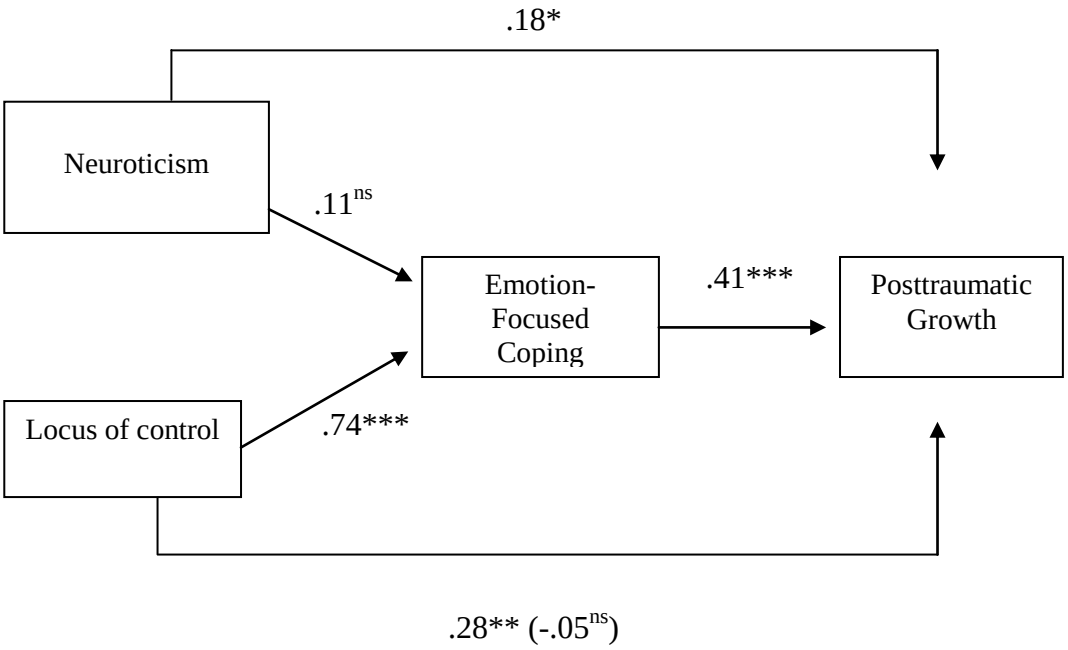
The relationship between agreeableness and changes in self-perception was mediated by emotion-focused coping. Agreeableness was a significant predictor of changes in self-perception ($\beta = .24$, $p < .01$) and emotion-focused coping ($\beta = .25$, $p < .01$). Emotion-focused coping was a significant predictor of changes in self-perception ($\beta = .45$, $p < .001$). The final condition of mediation was also met: The standardized regression coefficient between agreeableness and changes in self-perception decreased significantly when controlling for emotion-focused coping (from $\beta = .24$, $p < .01$ to $\beta = .14$, $p = .11$). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel $z = 2.40$, $p < .05$). Therefore, emotion-focused coping mediated the relationship between agreeableness and changes in self-perception (See Figure 39).



*Note. * p < .01, ** p < .001*

Figure 39. Agreeableness – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Emotion-focused Coping as the Mediator

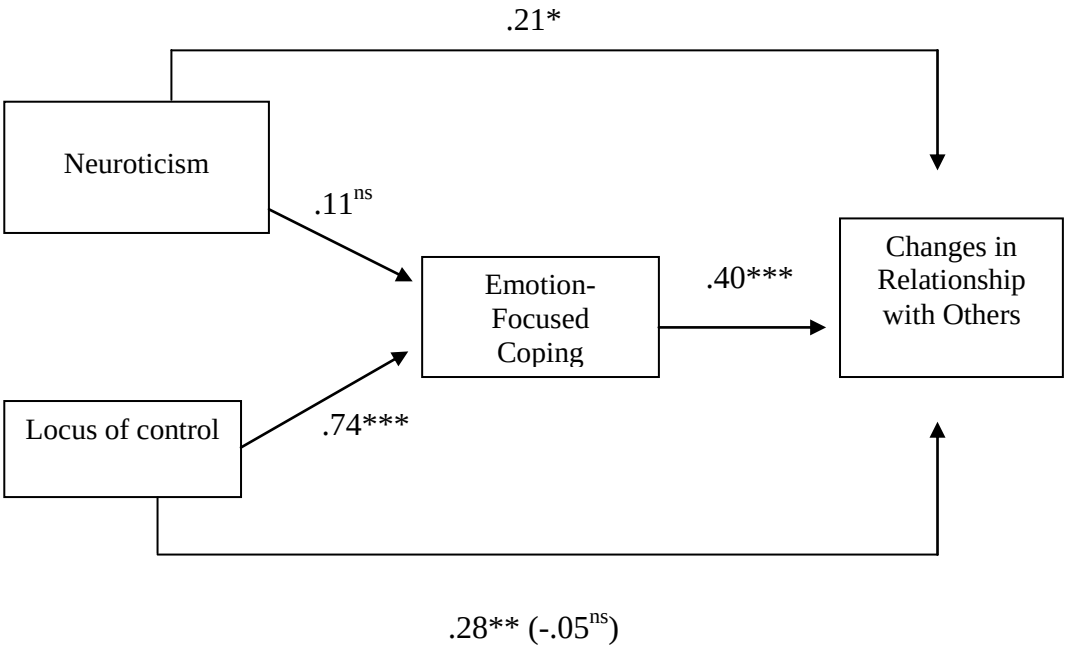
The relationship between neuroticism and posttraumatic growth was not mediated by emotion-focused coping, because the conditions of mediation were not fulfilled. Neuroticism was marginally significant predictor of posttraumatic growth (β = .18, p = .052). Moreover, emotion-focused coping was significant predictor of posttraumatic growth (β = .41, p < .001). However, neuroticism was not a significant predictor of emotion-focused coping (β = .11, p = .24) Therefore, emotion-focused coping did not mediate the relationship between neuroticism and posttraumatic growth (See Figure 40).



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

Figure 40. Neuroticism – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Emotion-focused Coping as the Mediator

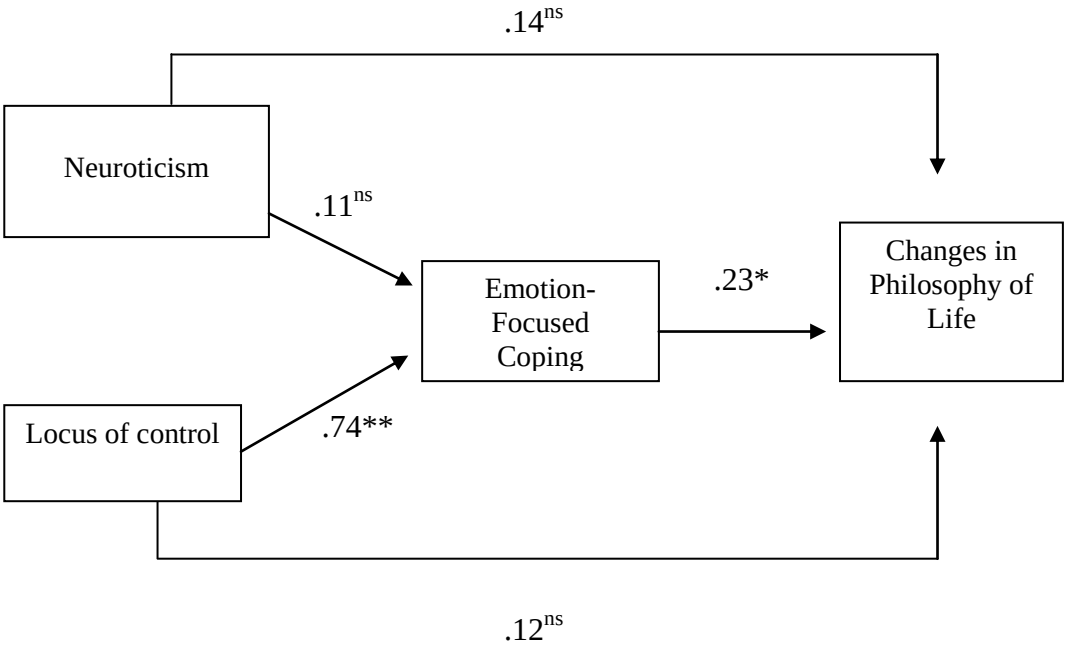
The relationship between neuroticism and changes in relationship with others was not mediated by emotion-focused coping, because the conditions of mediation were not fulfilled. Neuroticism was a significant predictor of changes in relationship with others (β = .21, p < .05). Moreover, emotion-focused coping was a significant predictor of changes in relationship with others (β = .40, p < .001). However, neuroticism was not a significant predictor of emotion-focused coping (β = .11, p = .24) Therefore, emotion-focused coping did not mediate the relationship between neuroticism and changes in relationship with others (See Figure 41).



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

Figure 41. Neuroticism – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Emotion-focused Coping as the Mediator

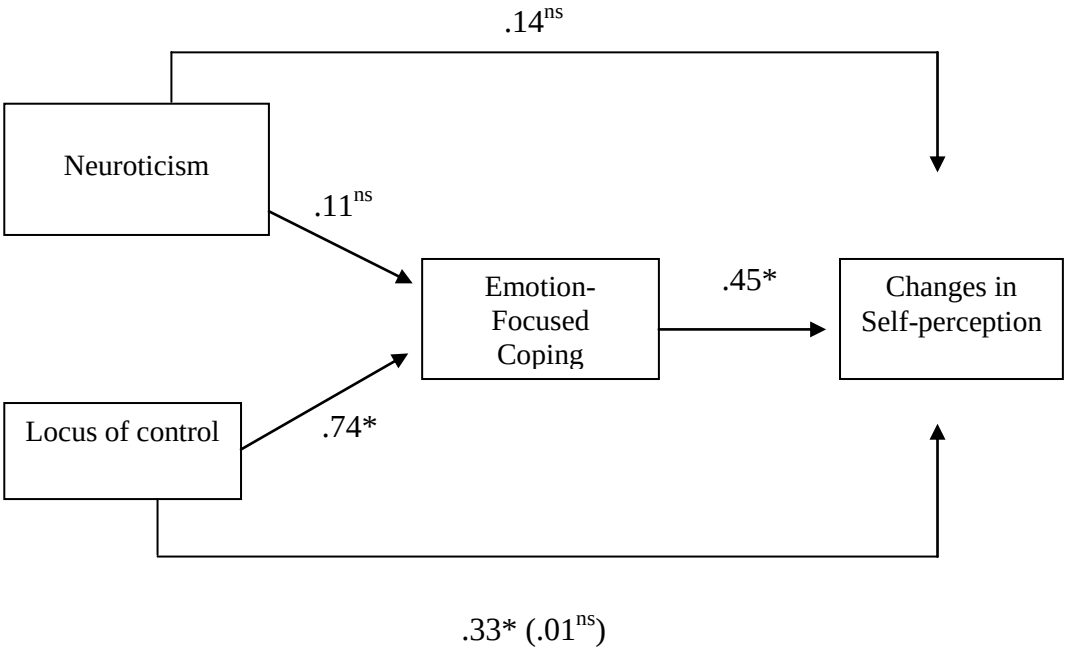
Emotion-focused coping did not mediate the relationship between neuroticism and changes in philosophy of life. Neuroticism was not a significant predictor of emotion-focused coping (β = .11, p = .24). Moreover, it was not a significant predictor of changes in philosophy of life (β = .14, p = .14). Therefore, the relationship between neuroticism and changes in philosophy of life was not mediated by emotion-focused coping (See Figure 42).



*Note. * $p < .05$, ** $p < .001$*

Figure 42. Neuroticism – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Emotion-focused Coping as the Mediator

The relationship between neuroticism and changes in self-perception was not mediated by emotion-focused coping. Neuroticism was not a significant predictor of emotion-focused coping (β = .11, p = .24). Moreover, it was not a significant predictor of changes in self-perception (β = .14, p = .13). Therefore, emotion-focused coping did not mediate the relationship between neuroticism and changes in self-perception (See Figure 43).

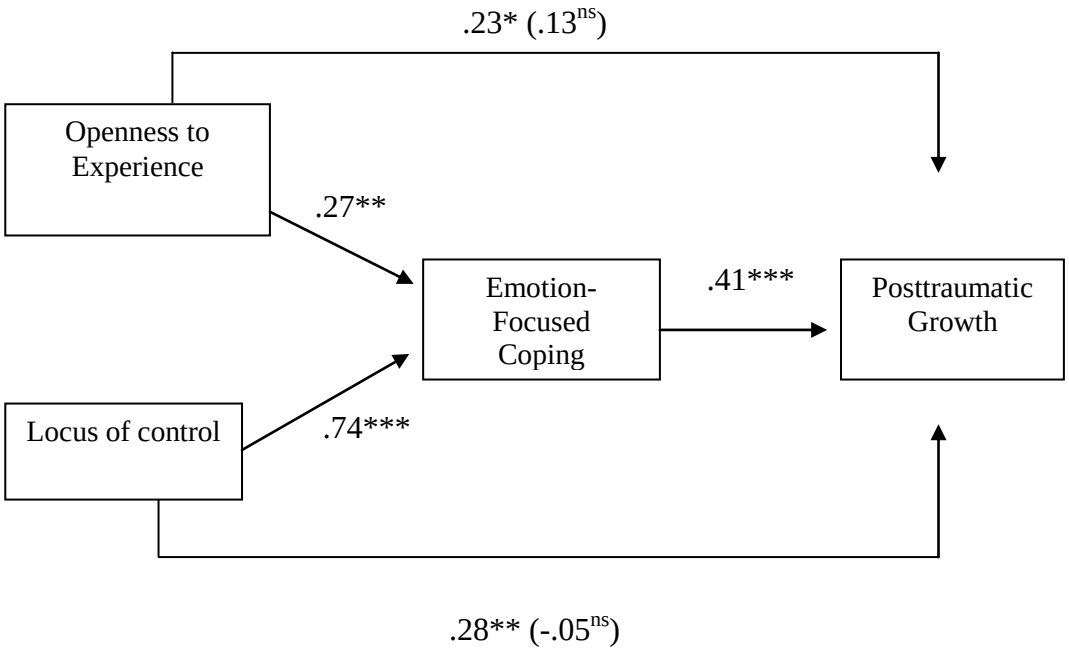


*Note. * $p < .001$*

Figure 43. Neuroticism – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Emotion-focused Coping as the Mediator

Emotion-focused coping mediated the relationship between openness to experience and posttraumatic growth. Openness to experience was a significant predictor of posttraumatic growth ($\beta = .23$, $p < .05$) and emotion-focused coping ($\beta = .27$, $p < .01$). Emotion-focused coping was a significant predictor of posttraumatic growth ($\beta = .41$, $p < .001$). The standardized regression coefficient between openness to experience and posttraumatic growth decreased significantly when controlling for emotion-focused coping (from $\beta = .23$, $p < .05$ to $\beta = .13$, $p = .15$). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel $z = 2.51$, $p <$

.05). Therefore, emotion-focused coping was a mediator of the relationship between openness to experience and posttraumatic growth (See Figure 44).

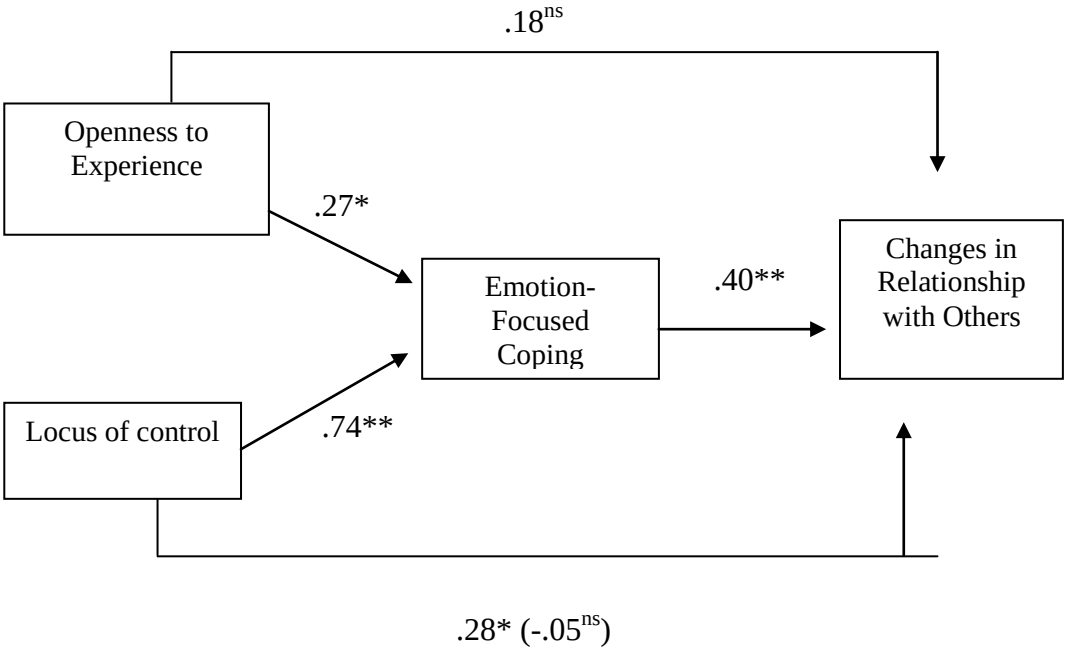


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 44. Openness to Experience – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Emotion-focused Coping as the Mediator

The relationship between openness to experience and changes in relationship with others was not mediated by emotion-focused coping. Although openness to experience was a significant predictor of emotion-focused coping ($\beta = .27$, $p < .01$) and emotion-focused coping was a significant predictor of changes in relationship with others ($\beta = .40$, $p < .001$), openness to experience was not a significant predictor

of changes in relationship with others (β = .18, p = .06). Emotion-focused coping did not mediate the relationship between openness to experience and changes in relationship with others since the conditions of mediation were not fulfilled (See Figure 45).

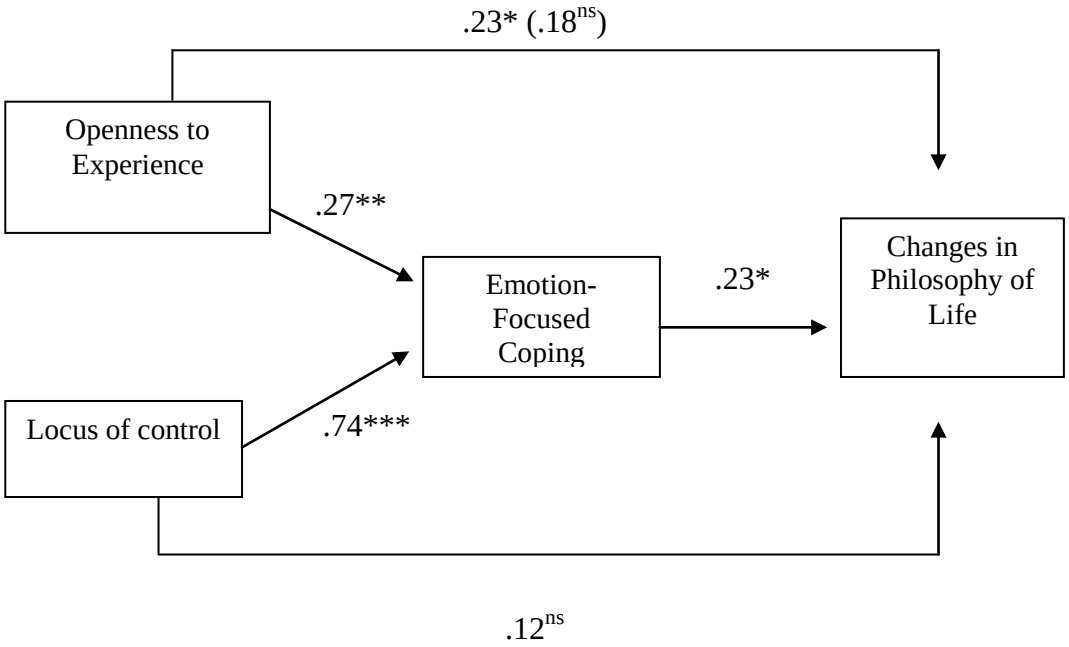


*Note. * p < .01, ** p < .001*

Figure 45. Openness to Experience – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Emotion-focused Coping as the Mediator

Emotion-focused coping mediated the relationship between openness to experience and changes in philosophy of life. Openness to experience was a significant predictor of changes in philosophy of life (β = .23, p < .05) and emotion-

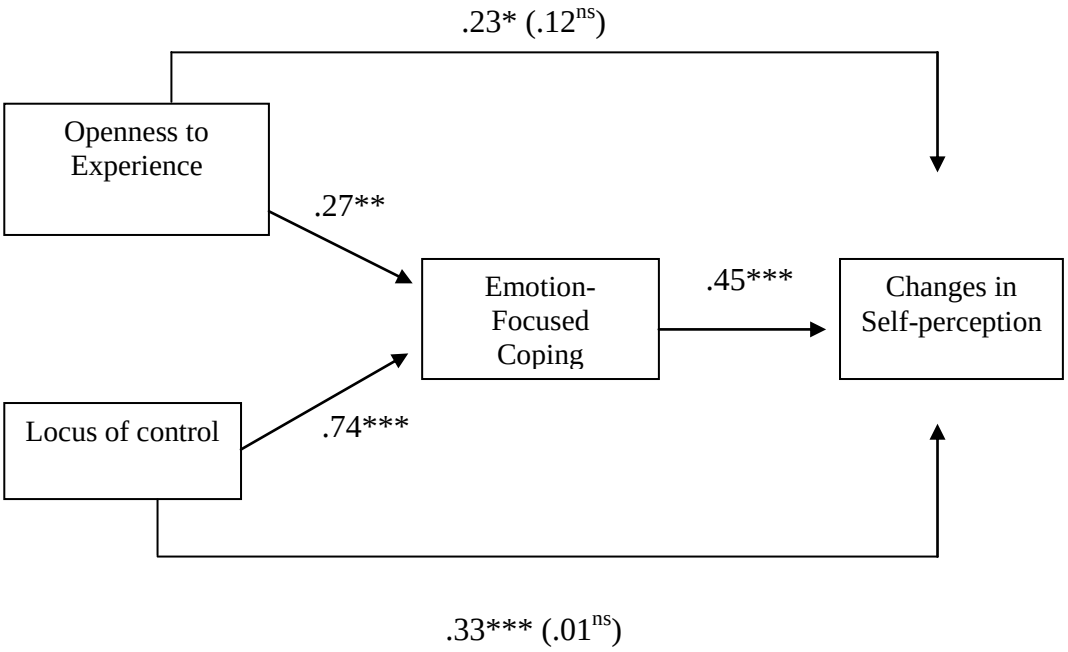
focused coping (β = .27, p < .01). Emotion-focused coping was a significant predictor of changes in philosophy of life (β = .23, p < .05). The standardized regression coefficient between openness to experience and changes in philosophy of life decreased significantly when controlling for emotion-focused coping (from β = .23, p < .05 to β = .18, p = .06). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel z = 1.93, p < .05, one-tailed). Therefore, emotion-focused coping was a mediator of the relationship between openness to experience and changes in philosophy of life (See Figure 46).



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

Figure 46. Openness to Experience – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Emotion-focused Coping as the Mediator

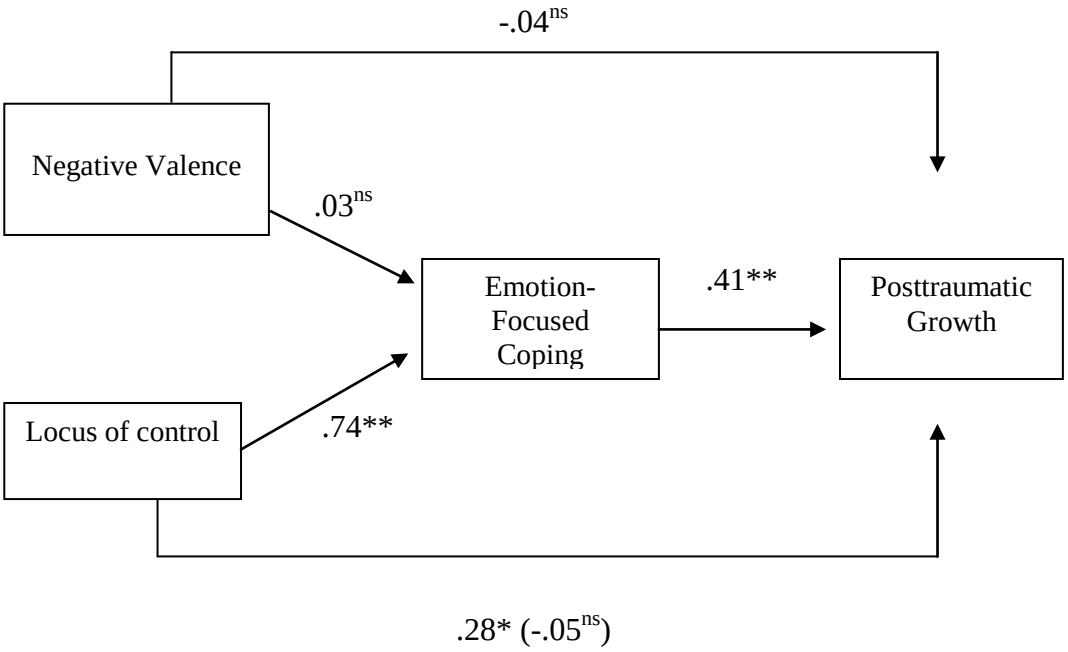
Emotion-focused coping did also mediate the relationship between openness to experience and changes in self-perception. Openness to experience was a significant predictors of both changes in self-perception (β = .23, p < .05) and emotion-focused coping (β = .27, p < .01). Emotion-focused coping was a significant predictor of changes in self-perception (β = .45, p < .001). The standardized regression coefficient between openness to experience and changes in self-perception decreased significantly when controlling for emotion-focused coping (from β = .23, p < .05 to β = .12, p = .19). The mediating role of emotion-focused coping was confirmed by Sobel test (Sobel z = 2.59, p < .01). Therefore, the relationship between openness to experience and changes in self-perception was mediated by emotion-focused coping (See Figure 47).



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

Figure 47. Openness to Experience – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Emotion-focused Coping as the Mediator

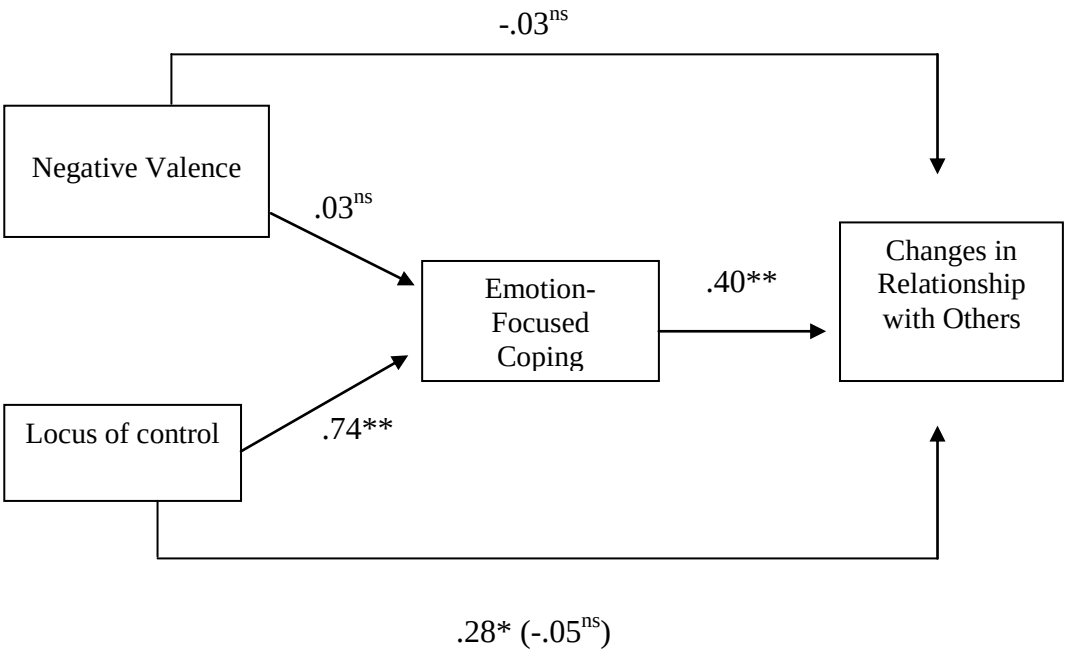
Emotion-focused coping did not mediate the relationship between negative valence and posttraumatic growth, because the conditions of mediation were not fulfilled. Emotion-focused coping was a significant predictor of posttraumatic growth (β = .41, p < .001). However, negative valence was not a significant predictor of posttraumatic growth (β = -.04, p = .70) and emotion-focused coping (β = .03, p = .78). Therefore, the relationship between negative valence and posttraumatic growth was not mediated by emotion-focused coping (See Figure 48).



*Note. * p < .01, ** p < .001*

Figure 48. Negative Valence – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Emotion-focused Coping as the Mediator

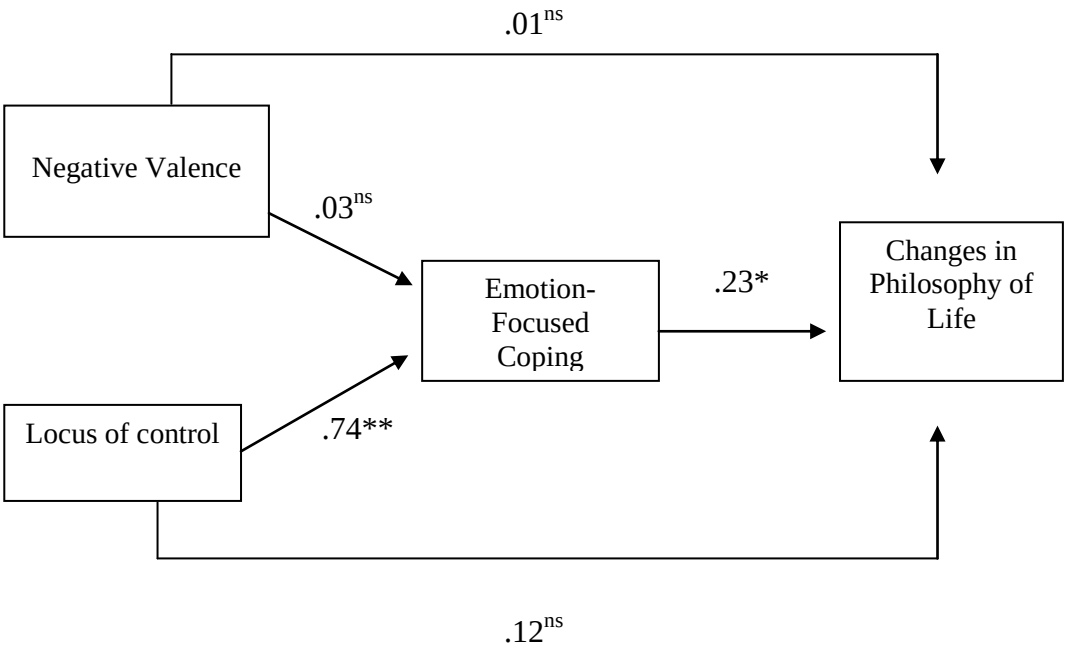
Emotion-focused coping did not mediate the relationship between negative valence and changes in relationship with others, because the conditions of mediation were not fulfilled. Emotion-focused coping was a significant predictor of changes in relationship with others (β = .40, p < .001). However, negative valence was not a significant predictor of changes in relationship with others (β = -.03, p = .79) and emotion-focused coping (β = .03, p = .78). Therefore, the relationship between negative valence and changes in relationship with others was not mediated by emotion-focused coping (See Figure 49).



*Note. * $p < .01$, ** $p < .001$*

Figure 49. Negative Valence – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Emotion-focused Coping as the Mediator

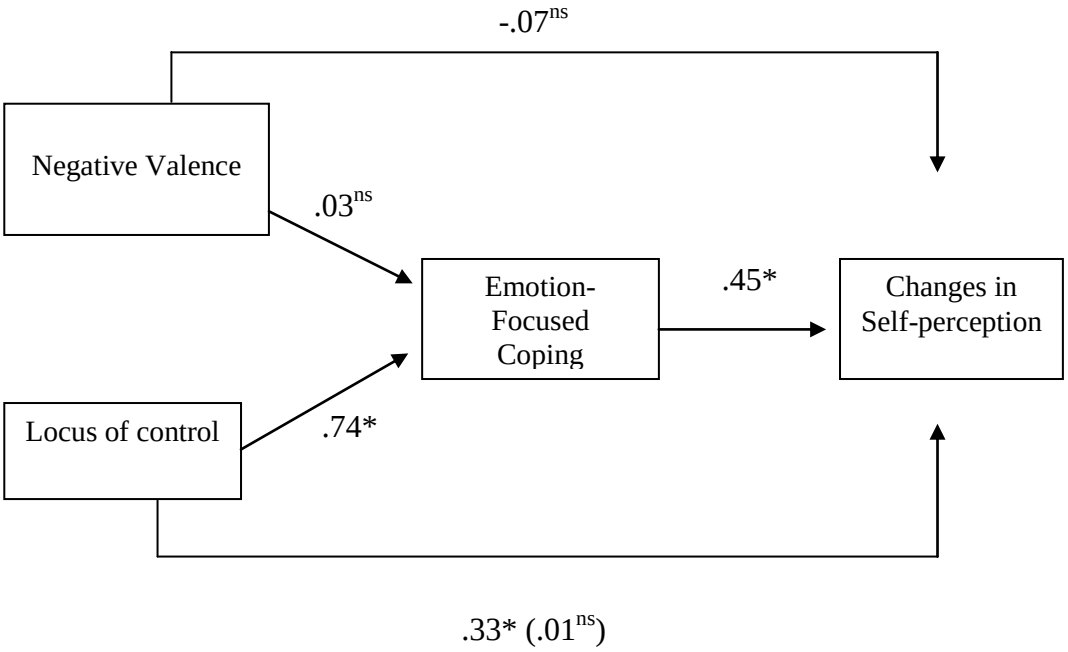
The relationship between negative valence and changes in philosophy of life was not mediated by emotion-focused coping, because the conditions of mediation were not fulfilled. Emotion-focused coping was a significant predictor of changes in philosophy of life ($\beta = .23$, $p < .05$). However, negative valence was not a significant predictor of changes in philosophy of life ($\beta = .01$, $p = .92$) and emotion-focused coping ($\beta = .03$, $p = .78$). Therefore, emotion-focused coping did not mediate the relationship between negative valence and changes in philosophy of life (See Figure 50).



*Note. * p < .05, ** p < .001*

Figure 50. Negative Valence – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Emotion-focused Coping as the Mediator

Emotion-focused coping did not mediate the relationship between negative valence and changes in self-perception, because the conditions of mediation were not fulfilled. Emotion-focused coping was a significant predictor of changes in self-perception (β = .45, p < .001). However, negative valence was not a significant predictor of changes in self-perception (β = -.07, p = .44) and emotion-focused coping (β = .03, p = .78). Therefore, the relationship between negative valence and changes in self-perception was not mediated by emotion-focused coping (See Figure 51).



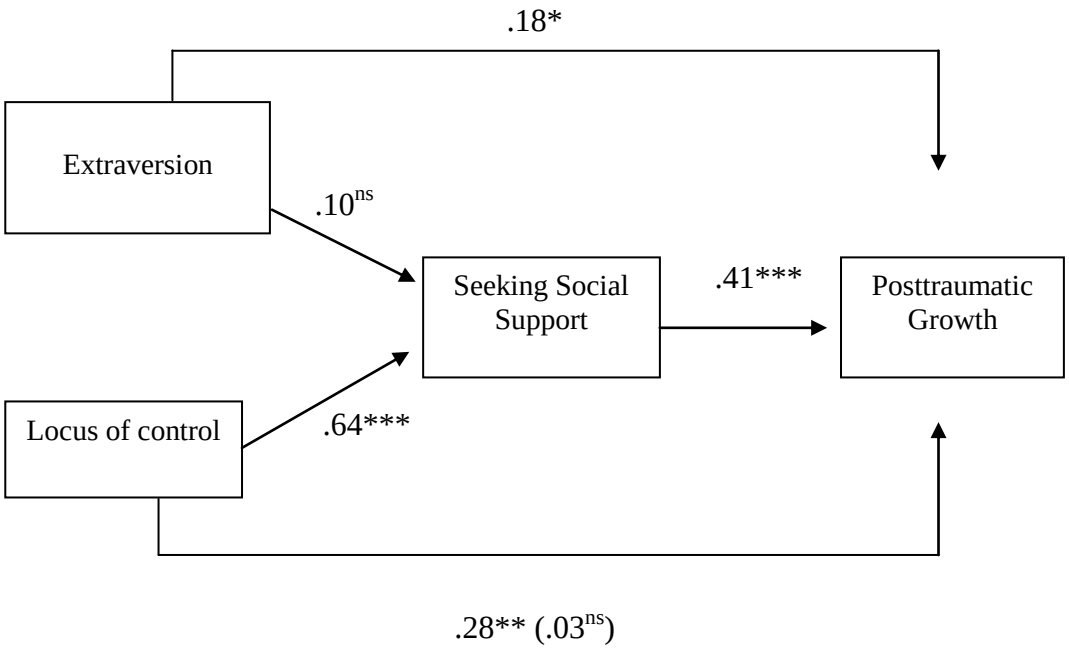
*Note. * $p < .001$*

Figure 51. Negative Valence – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Emotion-focused Coping as the Mediator

3.4.1.3. Seeking Social Support as Mediator

The relationship between extraversion and posttraumatic growth was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Extraversion was marginally significant predictor of posttraumatic growth (β = .18, p = .052). Moreover, seeking social support was a significant predictor of posttraumatic growth (β = .41, $p < .001$). However, extraversion was not a significant predictor of seeking social support (β = .10, p = .31) Therefore, seeking social support did not mediate the relationship between extraversion and posttraumatic growth (See Figure 52).

Seeking social support mediate the relationship between locus of control and posttraumatic growth. Locus of control was a significant predictor of posttraumatic growth (β = .28, p < .01) and seeking social support (β = .64, p < .001). Moreover, seeking social support was also a significant predictor of posttraumatic growth (β = .41, p < .001). The final condition of mediation was also met: The standardized regression coefficient between locus of control and posttraumatic growth decreased significantly when controlling for seeking social support (from β = .28, p < .01 to β = .03, p = .78). The mediating role of seeking social support between locus of control and posttraumatic growth was confirmed by Sobel test (Sobel z = 4.12, p < .001). Therefore, seeking social support was a mediator of the relationship between locus of control and posttraumatic growth (See Figure 52).

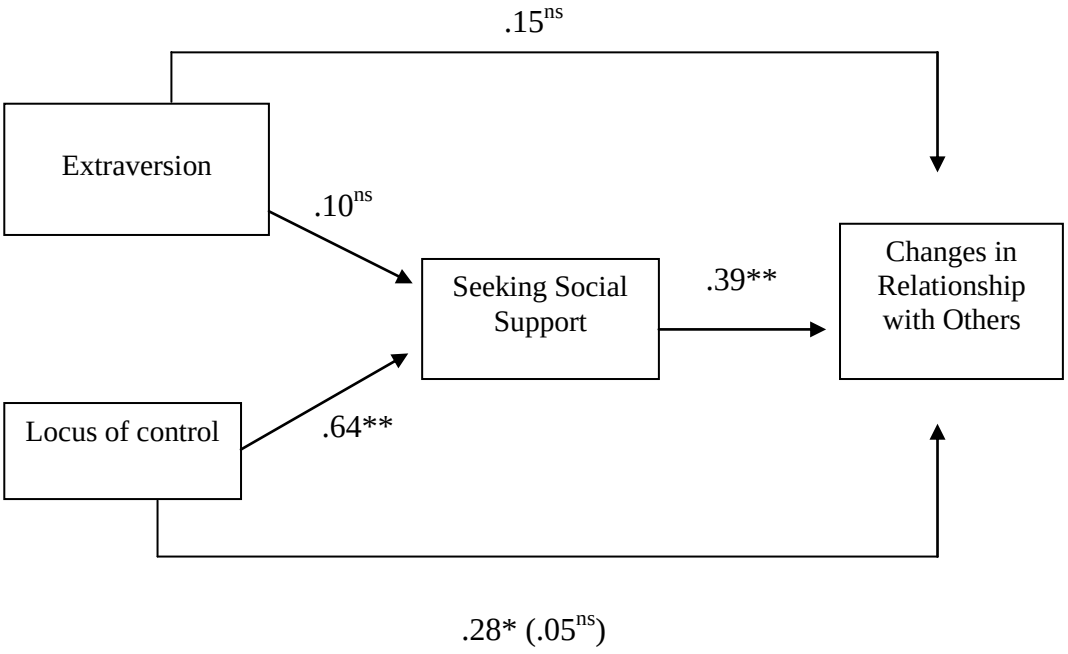


*Note. * p < .05, ** p < .01, *** p < .001*

Figure 52. Extraversion – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Seeking Social Support as the Mediator

In addition to posttraumatic growth, its factors that are changes in relationship with others, changes in philosophy of life, and changes in self-perception were also used as dependent variables. In terms of changes in relationship with others, seeking social support did not mediate the relationship between extraversion and changes in relationship with others, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in relationship with others (β = .39, p < .001). However, extraversion was not a significant predictor of changes in relationship with others (β = .15, p = .11) and seeking social support (β = .10, p = .31). Therefore, the relationship between extraversion and changes in relationship with others was not mediated by seeking social support (See Figure 53).

Seeking social support mediate the relationship between locus of control and changes in relationship with others. Locus of control was a significant predictor of changes in relationship with others (β = .28, p < .01) and seeking social support (β = .64, p < .001). Moreover, seeking social support was also a significant predictor of changes in relationship with others (β = .39, p < .001). The final condition of mediation was also met: The standardized regression coefficient between locus of control and changes in relationship with others decreased significantly when controlling for seeking social support (from β = .28, p < .01 to β = .05, p = .64). The mediating role of seeking social support between locus of control and changes in relationship with others was confirmed by Sobel test (Sobel z = 3.94, p < .001). Therefore, seeking social support was a mediator of the relationship between locus of control and changes in relationship with others (See Figure 53).



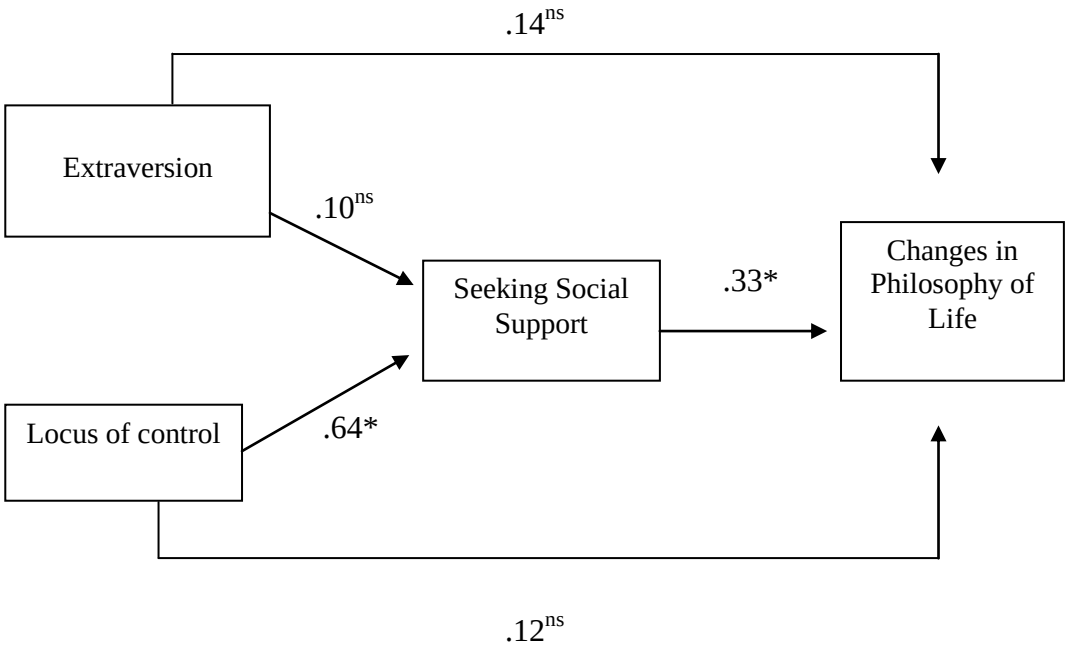
*Note. * p < .01, ** p < .001*

Figure 53. Extraversion – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Seeking Social Support as the Mediator

The relationship between extraversion and changes in philosophy of life was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in philosophy of life (β = .33, p < .001). However, extraversion was not a significant predictor of changes in philosophy of life (β = .14, p = .15) and seeking social support (β = .10, p = .31). Therefore, seeking social support did not mediate the relationship between extraversion and changes in philosophy of life (See Figure 54).

Locus of control was a significant variable of seeking social support (β = .64, p < .001) and seeking social support was a significant predictor of changes in

philosophy of life (β = .33, p < .001). On the other hand, locus of control was not a significant predictor of changes in philosophy of life (β = .12, p = .21). The relationship between locus of control and changes in philosophy of life was not mediated by seeking social support since the conditions of mediation were not fulfilled (See Figure 54).



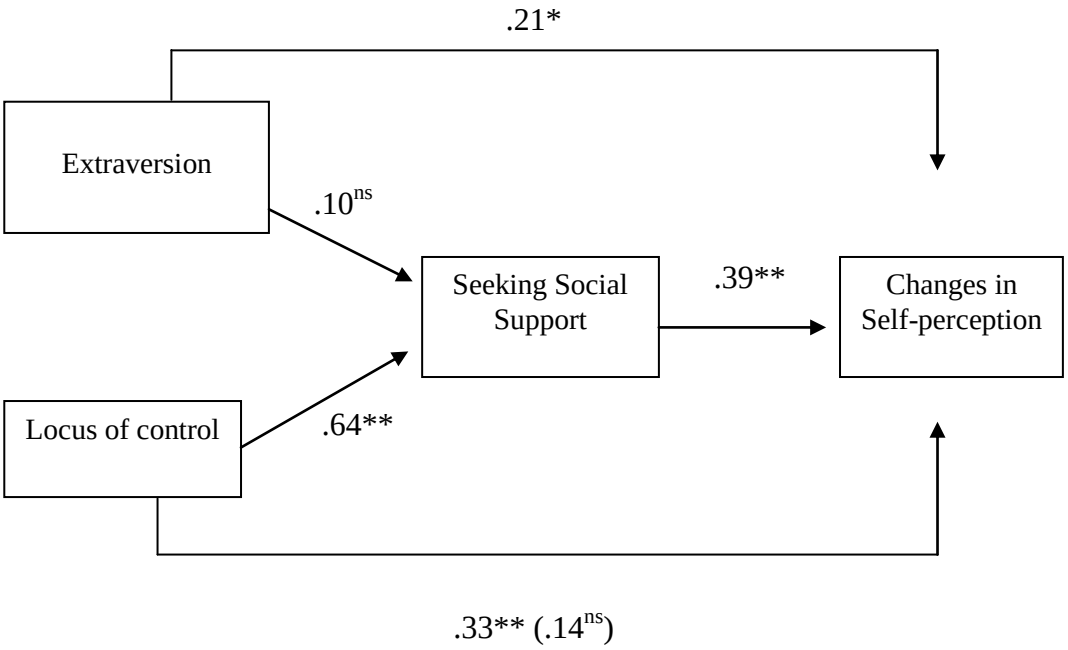
*Note. * p < .001*

Figure 54. Extraversion – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Seeking Social Support as the Mediator

The relationship between extraversion and changes in self-perception was not mediated by seeking social support, because the conditions of mediation were not

fulfilled. Extraversion was a significant predictor of changes in self-perception (β = .21, $p < .05$). Moreover, seeking social support was a significant predictor of changes in self-perception (β = .39, $p < .001$). However, extraversion was not a significant predictor of seeking social support (β = .10, p = .31) Therefore, seeking social support did not mediate the relationship between extraversion and changes in self-perception (See Figure 55).

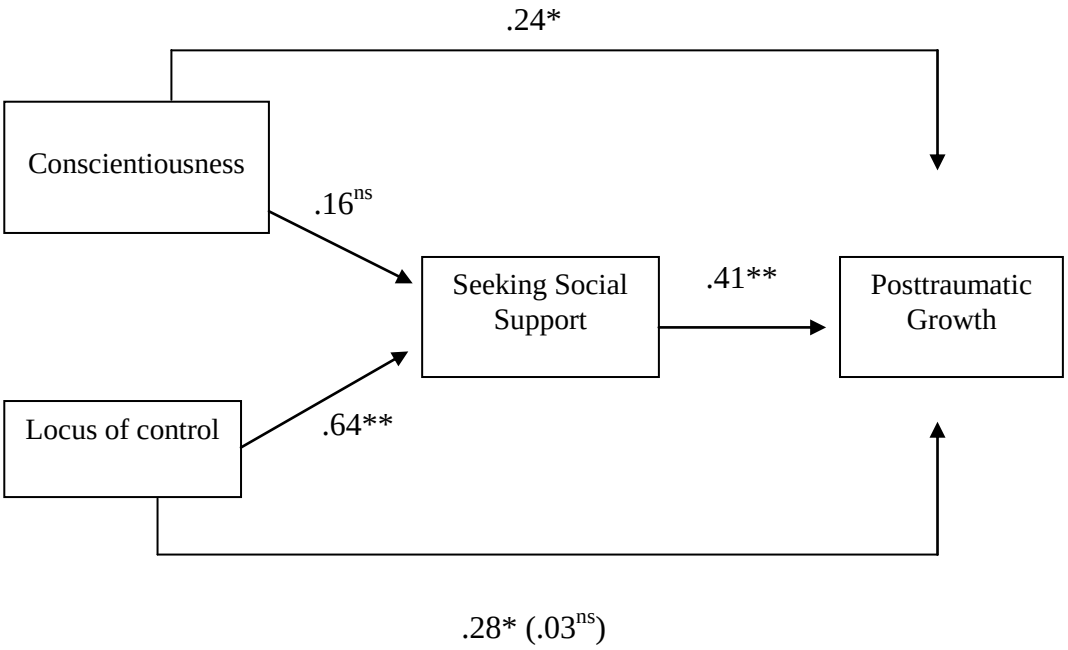
For the second independent variable, seeking social support mediate the relationship between locus of control and changes in self-perception. Locus of control was a significant predictor of changes in self-perception (β = .33, $p < .001$) and seeking social support (β = .64, $p < .001$). Moreover, seeking social support was also a significant predictor of changes in self-perception (β = .39, $p < .001$). The final condition of mediation was also met: The standardized regression coefficient between locus of control and changes in self-perception decreased significantly when controlling for seeking social support (from β = .33, $p < .001$ to β = .14, p = .21). The mediating role of seeking social support between locus of control and changes in self-perception was confirmed by Sobel test (Sobel z = 3.97, $p < .001$). Therefore, seeking social support was a mediator of the relationship between locus of control and changes in self-perception (See Figure 55).



*Note. * p < .05, ** p < .001*

Figure 55. Extraversion – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Seeking Social Support as the Mediator

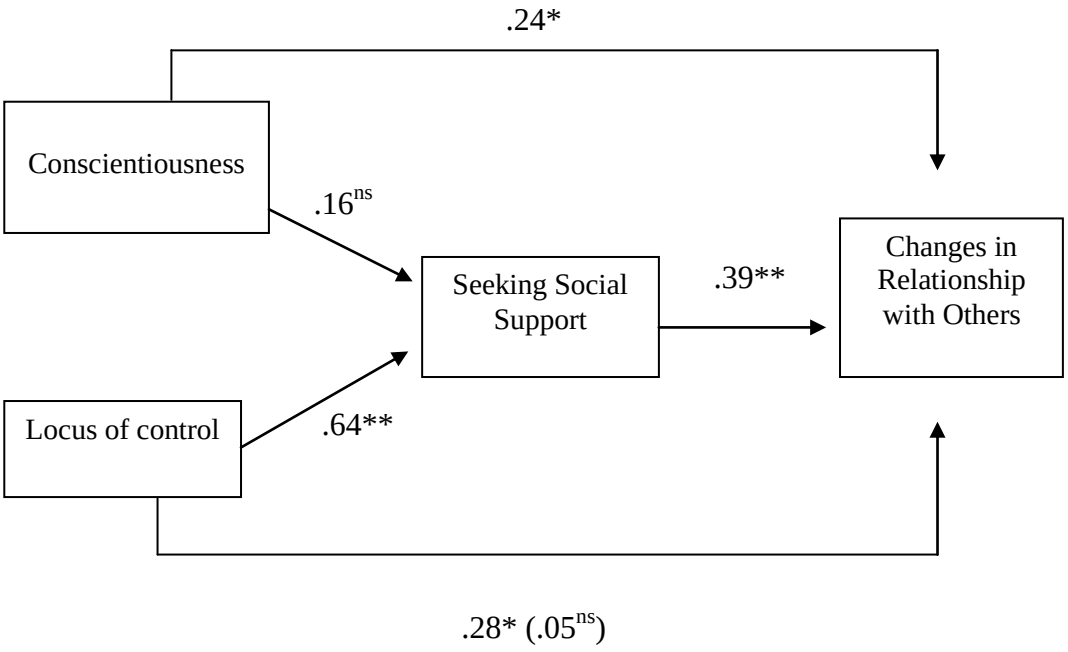
Seeking social support did not mediate the relationship between conscientiousness and posttraumatic growth, because the conditions of mediation were not fulfilled. Conscientiousness was a significant predictor of posttraumatic growth (β = .24, p < .01). Moreover, seeking social support was a significant predictor of posttraumatic growth (β = .41, p < .001). However, conscientiousness was not a significant predictor of seeking social support (β = .16, p = .08). Therefore, the relationship between conscientiousness and posttraumatic growth was not mediated by seeking social support (See Figure 56).



*Note. * $p < .01$, ** $p < .001$*

Figure 56. Conscientiousness – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Seeking Social Support as the Mediator

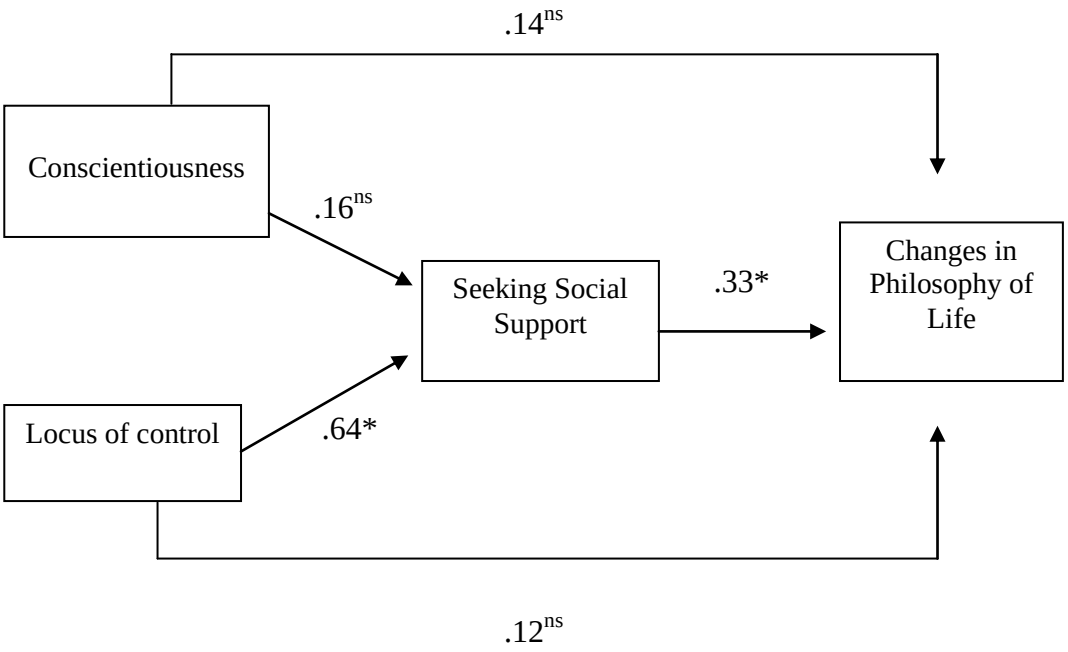
The relationship between conscientiousness and changes in relationship with others was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Conscientiousness was a significant predictor of changes in relationship with others (β = .24, p < .01). Moreover, seeking social support was a significant predictor of changes in relationship with others (β = .39, p < .001). However, conscientiousness was not a significant predictor of seeking social support (β = .16, p = .08). Therefore, seeking social support did not mediate the relationship between conscientiousness and changes in relationship with others (See Figure 57).



*Note. * $p < .01$, ** $p < .001$*

Figure 57. Conscientiousness – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Seeking Social Support as the Mediator

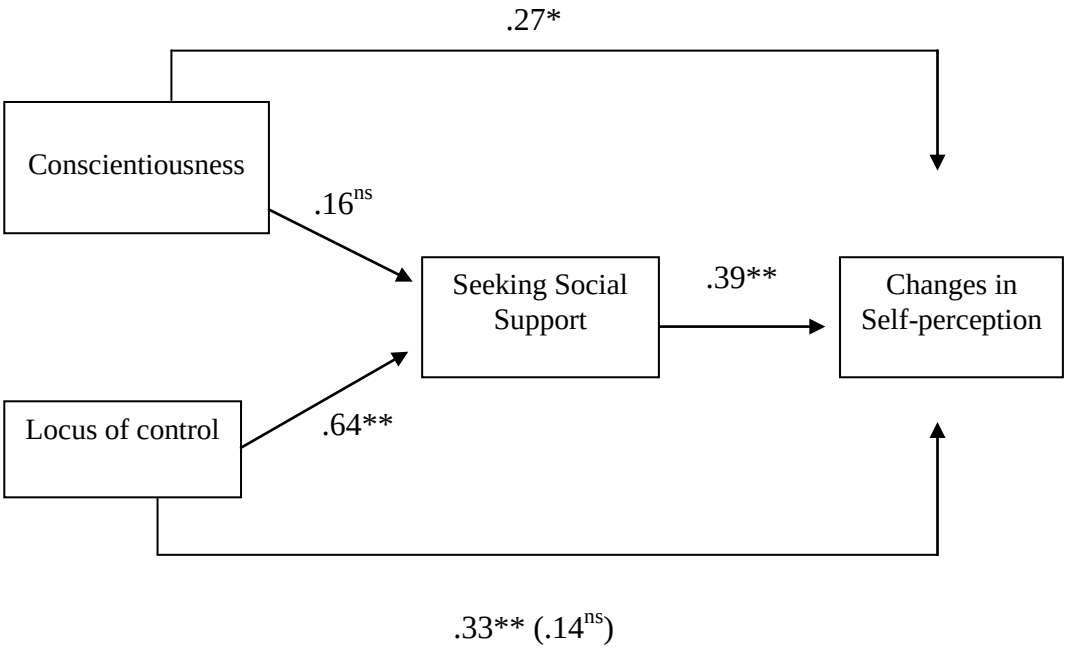
The relationship between conscientiousness and changes in philosophy of life was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in philosophy of life (β = .33, p < .001). However, conscientiousness was not a significant predictor of changes in philosophy of life (β = .14, p = .14) and seeking social support (β = .16, p = .08). Therefore, seeking social support did not mediate the relationship between conscientiousness and changes in philosophy of life (See Figure 58).



*Note. * $p < .001$*

Figure 58. Conscientiousness – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Seeking Social Support as the Mediator

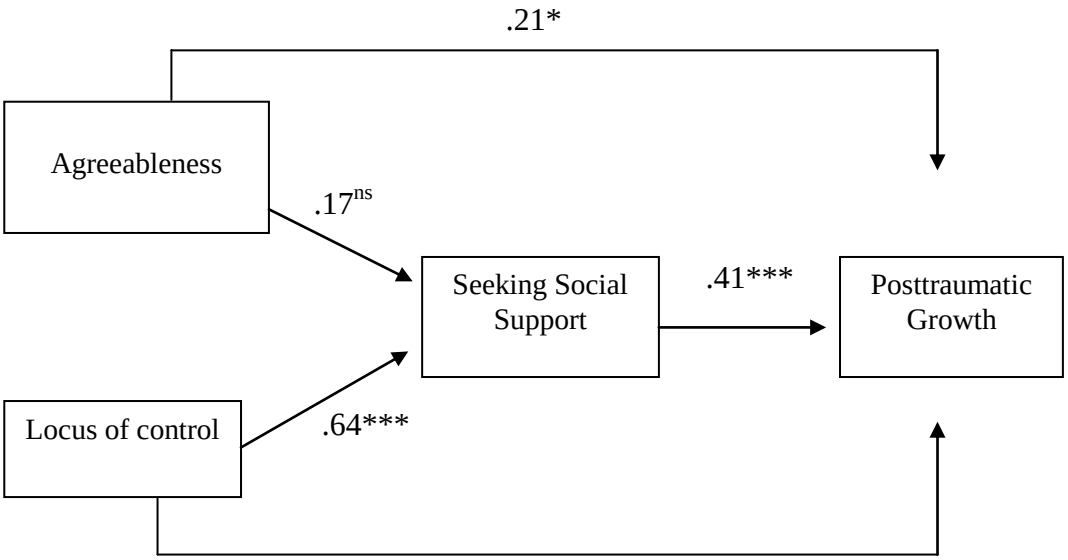
Seeking social support did not mediate the relationship between conscientiousness and changes in self-perception, because the conditions of mediation were not fulfilled. Conscientiousness was a significant predictor of changes in self-perception ($\beta = .27$, $p < .01$). Moreover, seeking social support was a significant predictor of changes in self-perception ($\beta = .39$, $p < .001$). However, conscientiousness was not a significant predictor of seeking social support ($\beta = .16$, $p = .08$). Therefore, the relationship between conscientiousness and changes in self-perception was not mediated by seeking social support (See Figure 59).



*Note. * $p < .01$, ** $p < .001$*

Figure 59. Conscientiousness – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Seeking Social Support as the Mediator

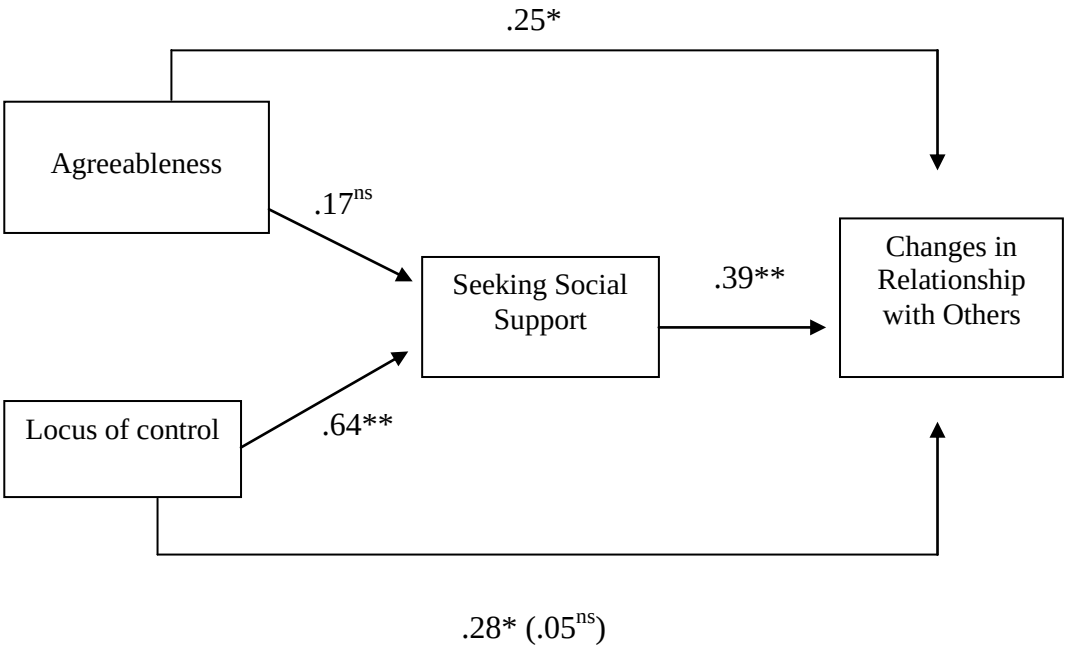
The relationship between agreeableness and posttraumatic growth was not mediated by seeking social support. Agreeableness was a significant predictor of posttraumatic growth ($\beta = .21$, $p < .05$). Moreover, seeking social support was also a significant predictor of posttraumatic growth ($\beta = .41$, $p < .001$). On the other hand, agreeableness was not a significant predictor of seeking social support ($\beta = .17$, $p = .08$). Therefore, the conditions of mediation were not fulfilled and seeking social support was not a mediator of the relationship between agreeableness and posttraumatic growth (See Figure 60).



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

Figure 60. Agreeableness – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Seeking Social Support as the Mediator

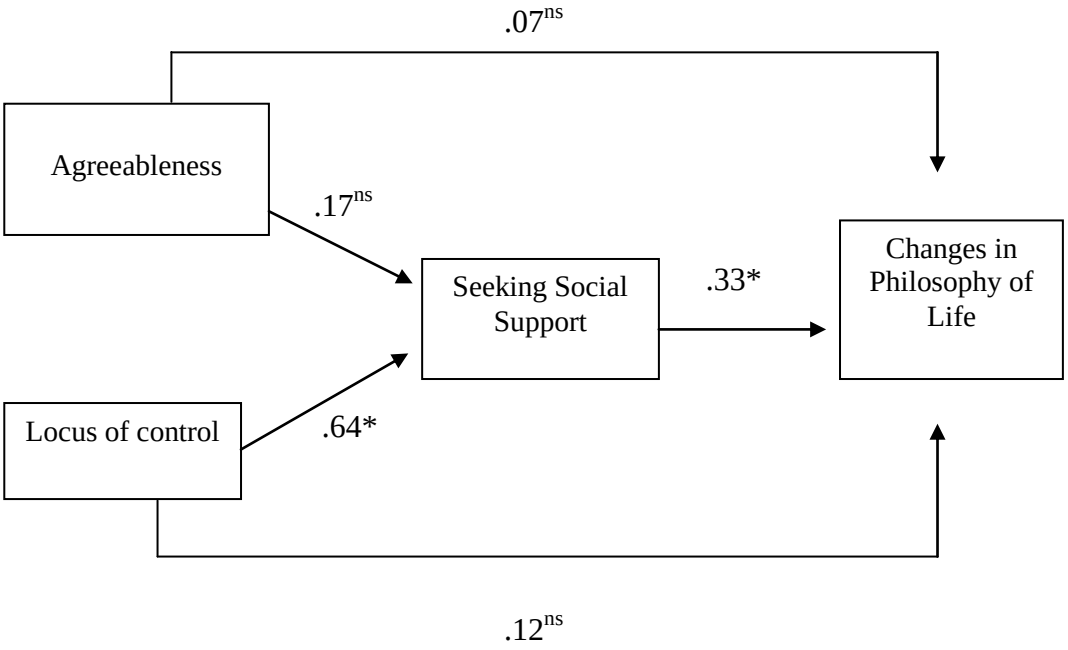
Seeking social support did not mediate the relationship between agreeableness and changes in relationship with others, because the conditions of mediation were not fulfilled. Agreeableness was a significant predictor of changes in relationship with others (β = .25, p < .01). Moreover, seeking social support was a significant predictor of changes in relationship with others (β = .39, p < .001). However, agreeableness was not a significant predictor of seeking social support (β = .17, p = .08). Therefore, the relationship between agreeableness and changes in relationship with others was not mediated by seeking social support (See Figure 61).



*Note. * p < .01, ** p < .001*

Figure 61. Agreeableness – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Seeking Social Support as the Mediator

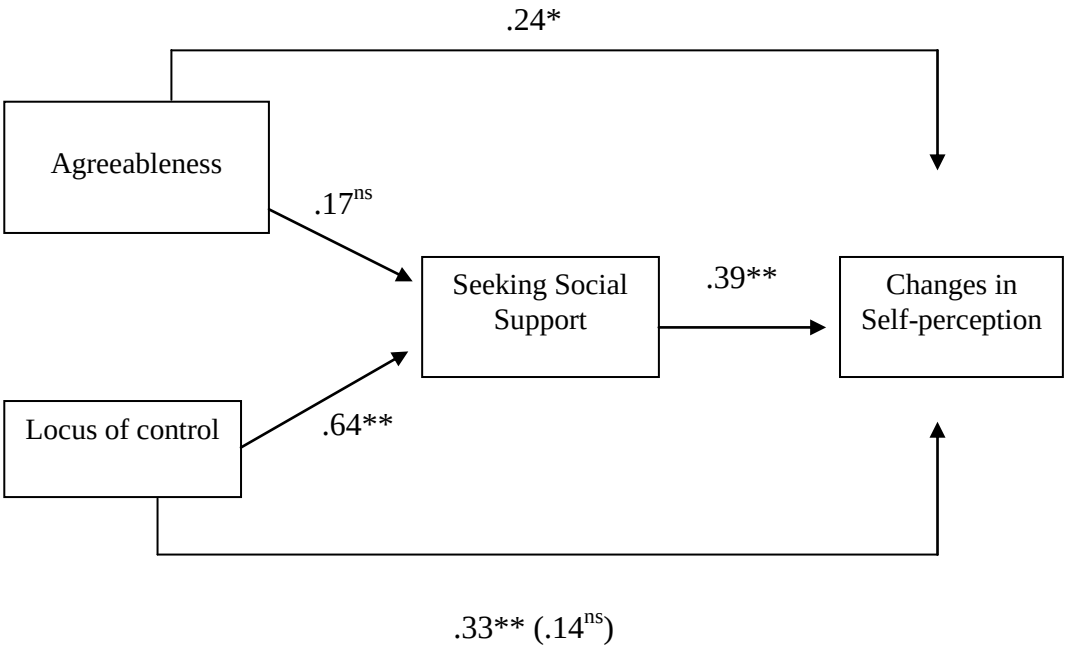
The relationship between agreeableness and changes in philosophy of life was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in philosophy of life (β = .33, p < .001). However, agreeableness was not a significant predictor of changes in philosophy of life (β = .07, p = .48) and seeking social support (β = .17, p = .08). Therefore, seeking social support did not mediate the relationship between agreeableness and changes in philosophy of life (See Figure 62).



*Note. * $p < .001$*

Figure 62. Agreeableness – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Seeking Social Support as the Mediator

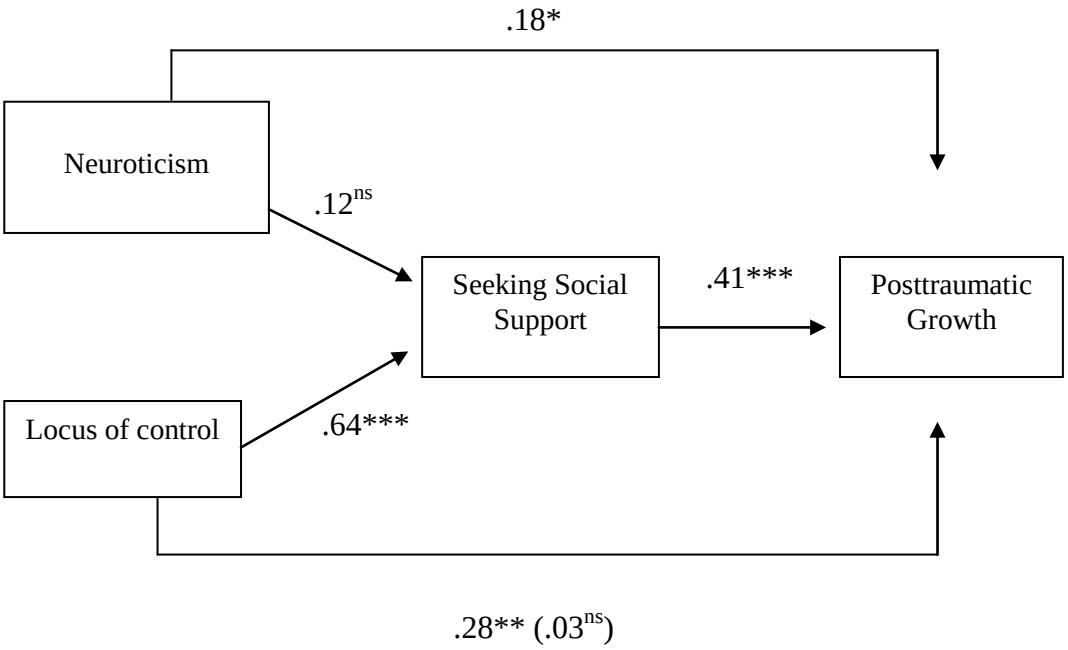
The relationship between agreeableness and changes in self-perception was not mediated by seeking social support. Agreeableness was a significant predictor of changes in self-perception ($\beta = .24$, $p < .01$). Moreover, seeking social support was also a significant predictor of changes in self-perception ($\beta = .39$, $p < .001$). On the other hand, agreeableness was not a significant predictor of seeking social support ($\beta = .17$, $p = .08$). Therefore, the conditions of mediation were not fulfilled and seeking social support was not a mediator of the relationship between agreeableness and changes in self-perception (See Figure 63).



*Note. * p < .01, ** p < .001*

Figure 63. Agreeableness – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Seeking Social Support as the Mediator

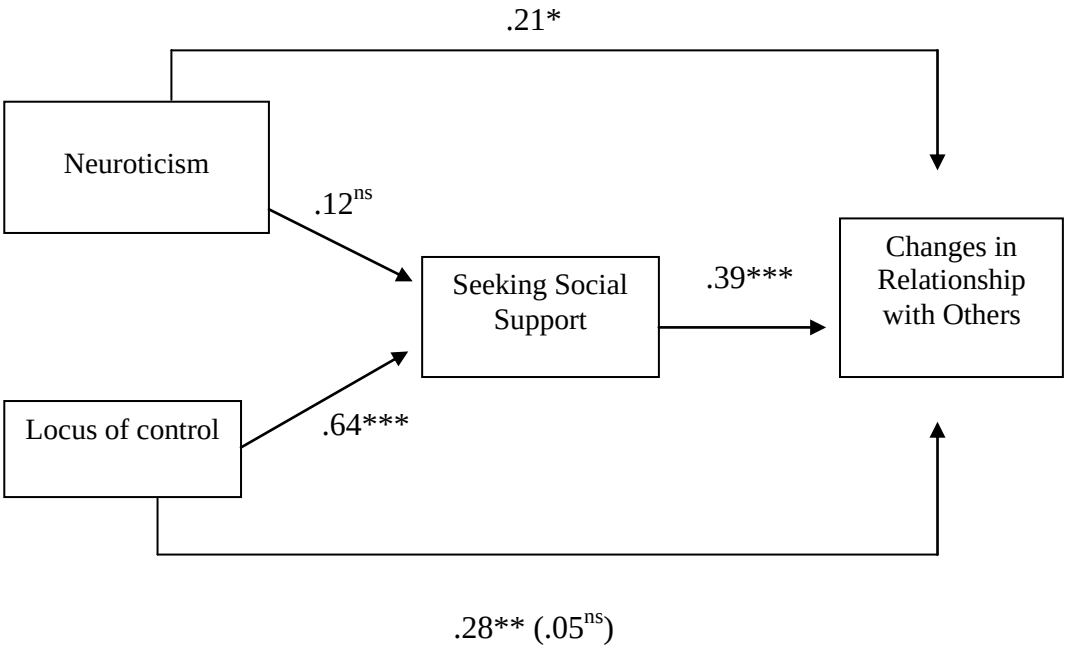
Seeking social support did not mediate the relationship between neuroticism and posttraumatic growth, because the conditions of mediation were not fulfilled. Neuroticism was marginally significant predictor of posttraumatic growth (β = .18, p = .052). Moreover, seeking social support was a significant predictor of posttraumatic growth (β = .41, p < .001). However, neuroticism was not a significant predictor of seeking social support (β = .12, p = .20). Therefore, the relationship between neuroticism and posttraumatic growth was not mediated by social support (See Figure 64).



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

Figure 64. Neuroticism - Posttraumatic Growth and Locus of Control - Posttraumatic Growth Relationships Having Seeking Social Support as the Mediator

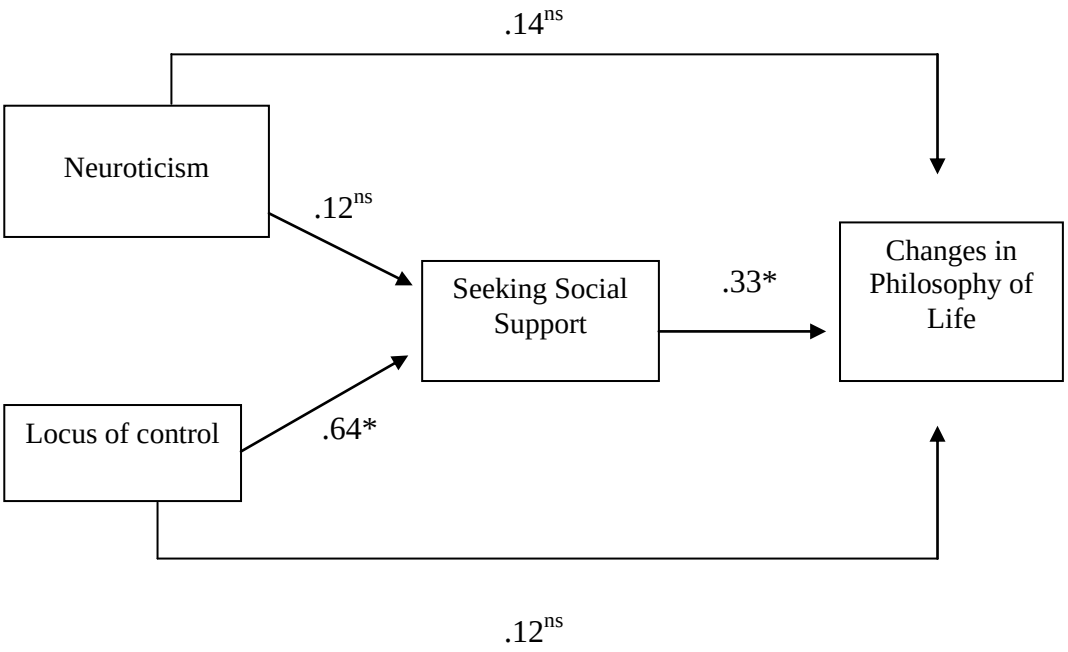
Seeking social support did not mediate the relationship between neuroticism and changes in relationship with others, because the conditions of mediation were not fulfilled. Neuroticism was a significant predictor of changes in relationship with others ($\beta = .21$, $p < .05$). Moreover, seeking social support was a significant predictor of changes in relationship with others ($\beta = .39$, $p < .001$). However, neuroticism was not a significant predictor of seeking social support ($\beta = .12$, $p = .20$). Therefore, the relationship between neuroticism and changes in relationship with others was mediated by seeking social support (See Figure 65).



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

Figure 65. Neuroticism – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Seeking Social Support as the Mediator

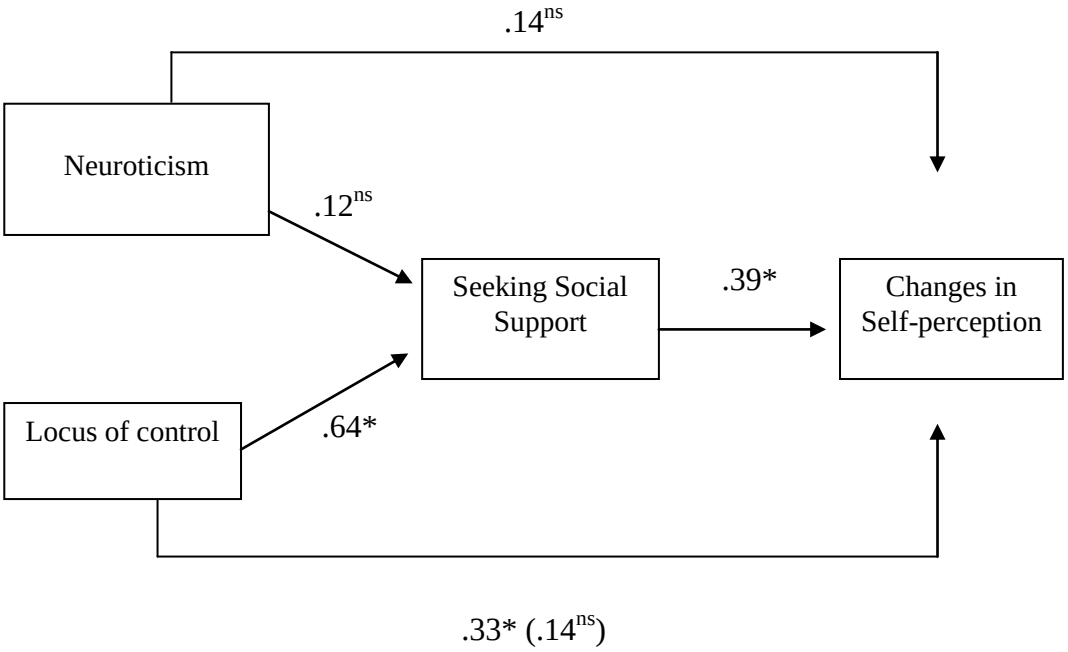
The relationship between neuroticism and changes in philosophy of life was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in philosophy of life (β = .33, p < .001). However, neuroticism was not a significant predictor of changes in philosophy of life (β = .14, p = .14) and seeking social support (β = .12, p = .20). Therefore, seeking social support did not mediate the relationship between neuroticism and changes in philosophy of life (See Figure 66).



*Note. * $p < .001$*

Figure 66. Neuroticism – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Seeking Social Support as the Mediator

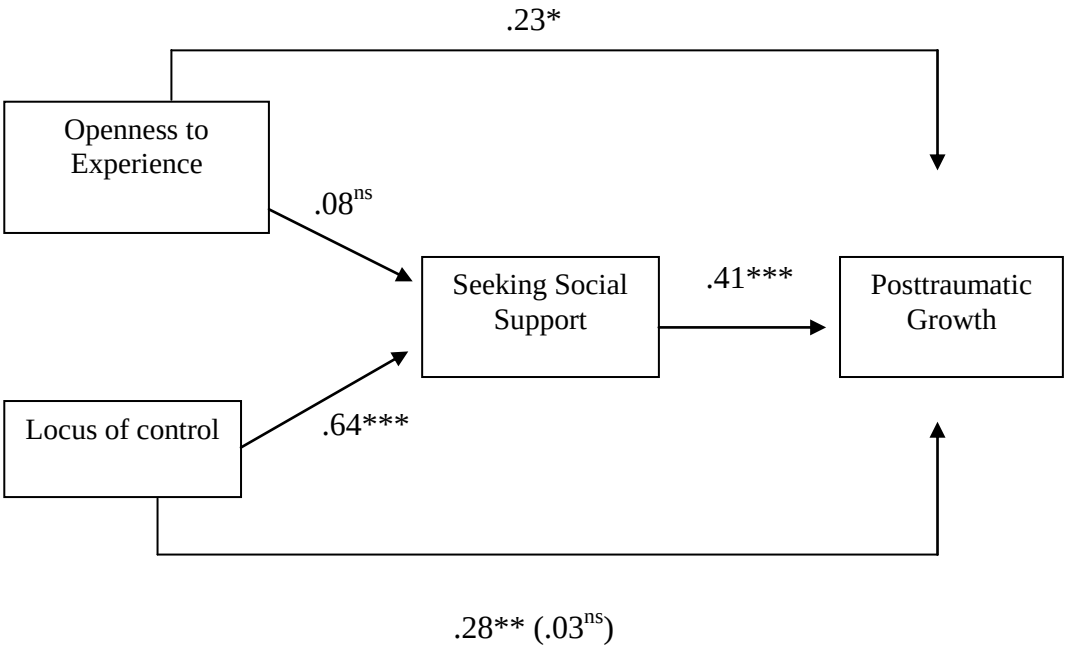
Seeking social support did not mediate the relationship between neuroticism and changes in self-perception, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in self-perception ($\beta = .39$, $p < .001$). However, neuroticism was not a significant predictor of changes in self-perception ($\beta = .14$, $p = .13$) and seeking social support ($\beta = .12$, $p = .20$). Therefore, the relationship between neuroticism and changes in self-perception was not mediated by seeking social support (See Figure 67).



*Note. * $p < .001$*

Figure 67. Neuroticism – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Seeking Social Support as the Mediator

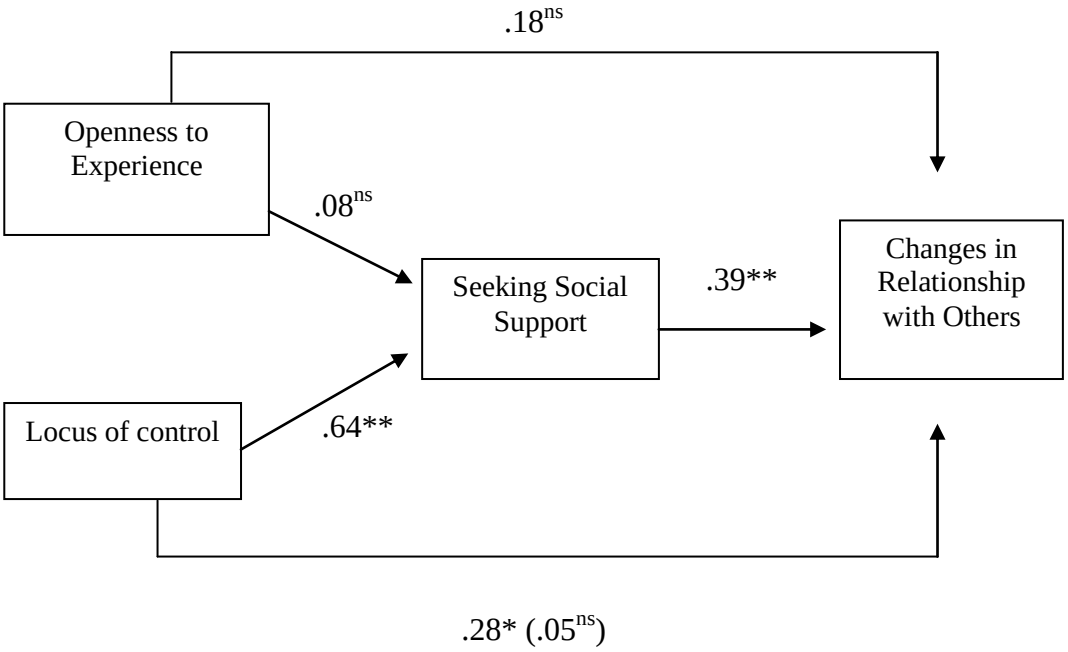
The relationship between openness to experience and posttraumatic growth was not mediated by seeking social support. Although both openness to experience ($\beta = .23$, $p < .05$) and seeking social support ($\beta = .41$, $p < .001$) were predictors of posttraumatic growth, openness to experience was not a significant predictor of seeking social support ($\beta = .08$, $p = .38$). Therefore, the conditions of mediation were not fulfilled and seeking social support mediated the relationship between openness to experience and posttraumatic growth (See Figure 68).



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

Figure 68. Openness to Experience – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Seeking Social Support as the Mediator

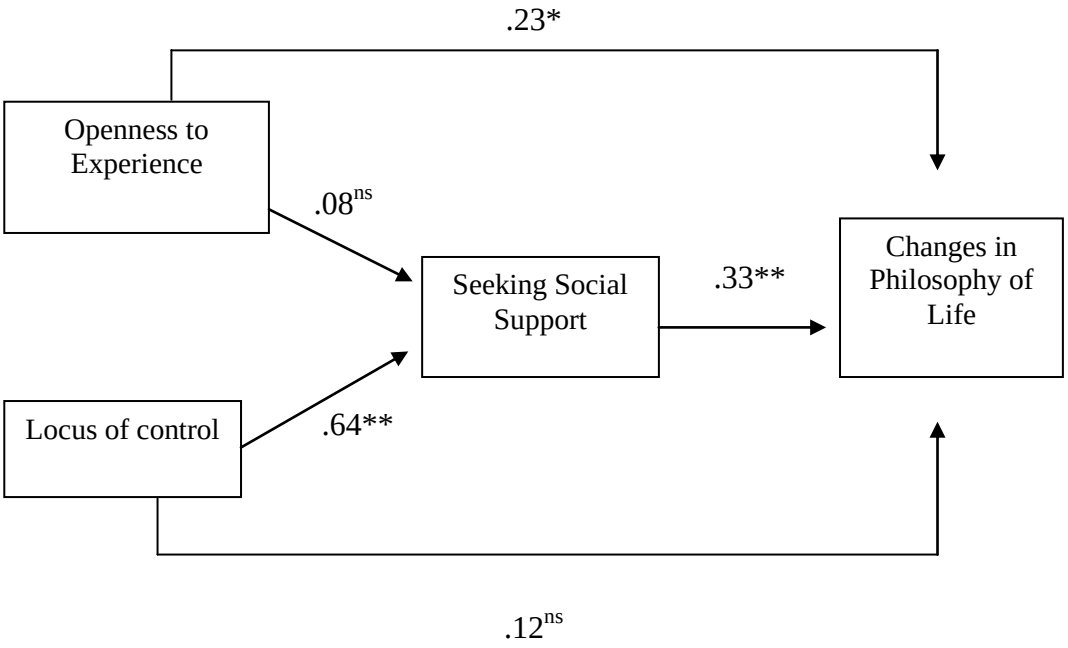
Seeking social support did not mediate the relationship between openness to experience and changes in relationship with others, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in relationship with others (β = .39, p < .001). However, openness to experience was not a significant predictor of changes in relationship with others (β = .18, p = .06) and seeking social support (β = .08, p = .38). Therefore, the relationship between openness to experience and changes in relationship with others was not mediated by seeking social support (See Figure 69).



*Note. * p < .01, ** p < .001*

Figure 69. Openness to Experience – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Seeking Social Support as the Mediator

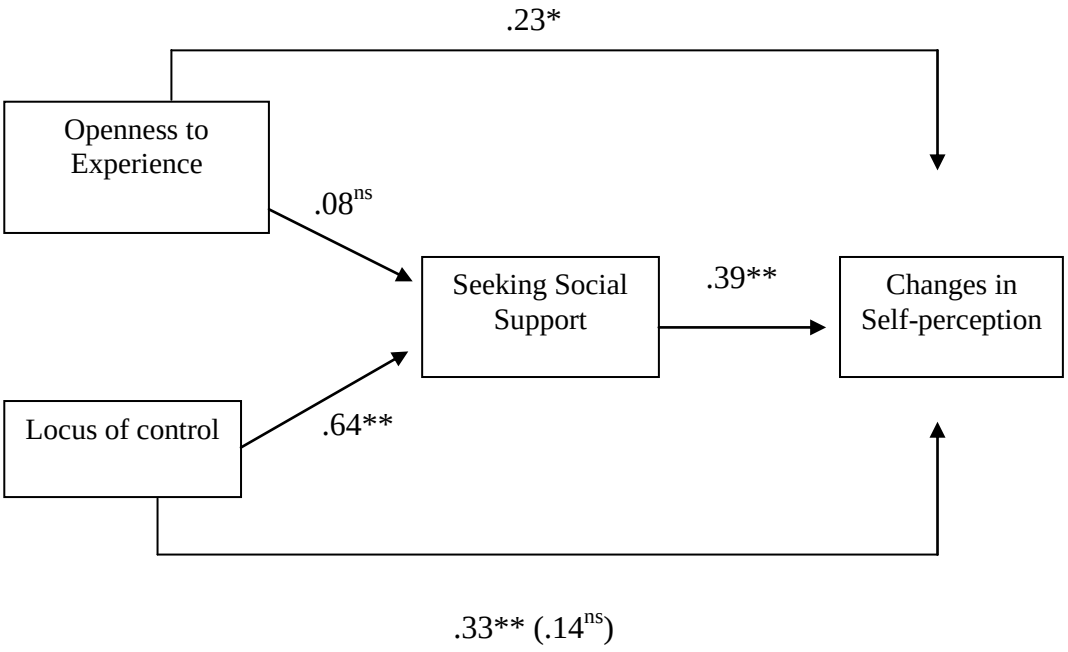
The relationship between openness to experience and changes in philosophy of life was not mediated by seeking social support. Although both openness to experience (β = .23, p < .05) and seeking social support (β = .33, p < .001) were significant predictors of changes in philosophy of life, openness to experience was not a significant predictor of seeking social support (β = .08, p = .38). Therefore, the conditions of mediation were not fulfilled and seeking social support did not mediate the relationship between openness to experience and changes in philosophy of life (See Figure 70).



*Note. * $p < .05$, ** $p < .001$*

Figure 70. Openness to Experience – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Seeking Social Support as the Mediator

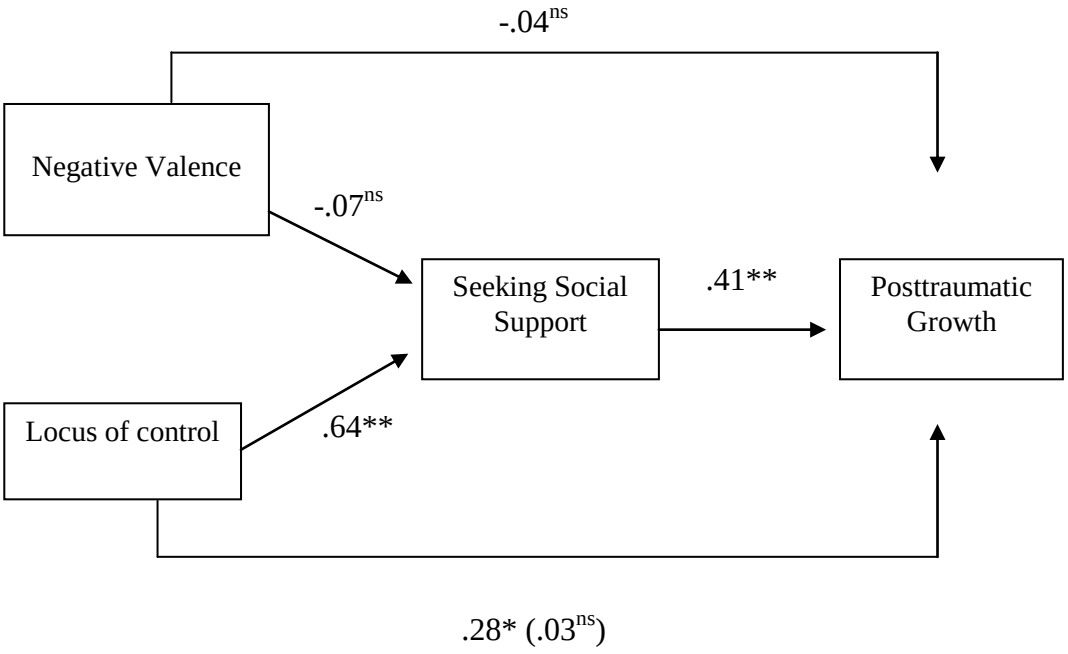
The relationship between openness to experience and changes in self-perception was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Openness to experience was a significant predictor of changes in self-perception ($\beta = .23$, $p < .05$). Moreover, seeking social support was a significant predictor of changes in self-perception ($\beta = .39$, $p < .001$). However, openness to experience was not a significant predictor of seeking social support ($\beta = .08$, $p = .38$) Therefore, seeking social support did not mediate the relationship between openness to experience and changes in self-perception (See Figure 71).



*Note. * $p < .05$, ** $p < .001$*

Figure 71. Openness to Experience – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Seeking Social Support as the Mediator

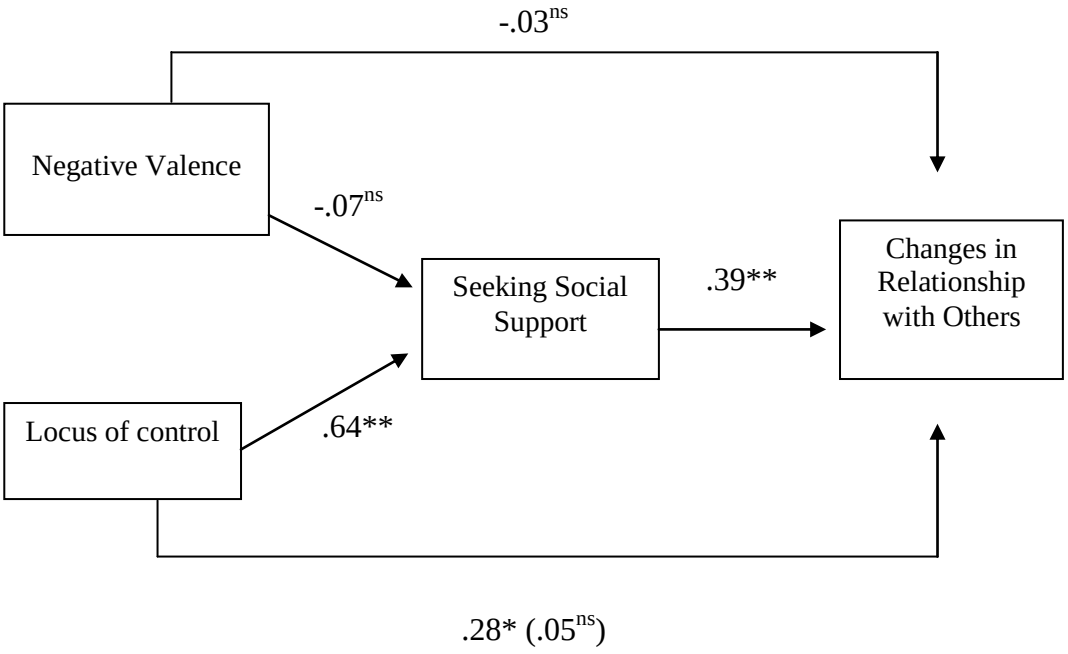
Seeking social support did not mediate the relationship between negative valence and posttraumatic growth, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of posttraumatic growth (β = .41, p < .001). However, negative valence was not a significant predictor of posttraumatic growth (β = -.04, p = .70) and seeking social support (β = -.07, p = .45). Therefore, the relationship between negative valence and posttraumatic growth was not mediated by seeking social support (See Figure 72).



*Note. * p < .01, ** p < .001*

Figure 72. Negative Valence – Posttraumatic Growth and Locus of Control – Posttraumatic Growth Relationships Having Seeking Social Support as the Mediator

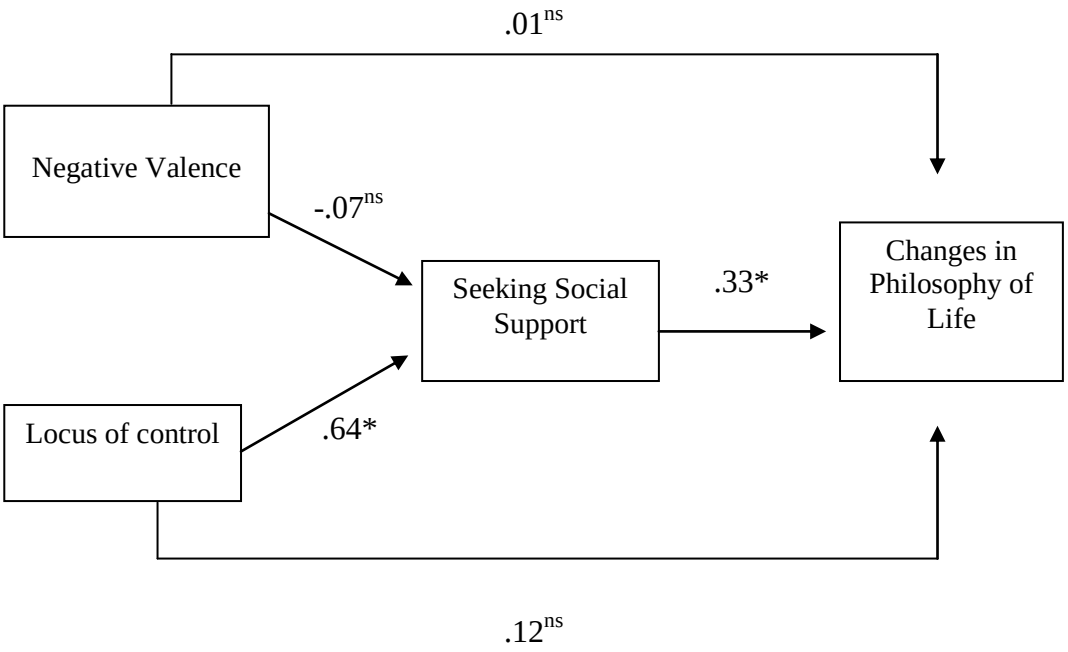
The relationship between negative valence and changes in relationship with others was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in relationship with others (β = .39, p < .001). However, negative valence was not a significant predictor of changes in relationship with others (β = -.03, p = .79) and seeking social support (β = -.07, p = .45). Therefore, seeking social support did not mediate the relationship between negative valence and changes in relationship with others (See Figure 73).



*Note. * p < .01, ** p < .001*

Figure 73. Negative Valence – Changes in Relationship with Others and Locus of Control – Changes in Relationship with Others Relationships Having Seeking Social Support as the Mediator

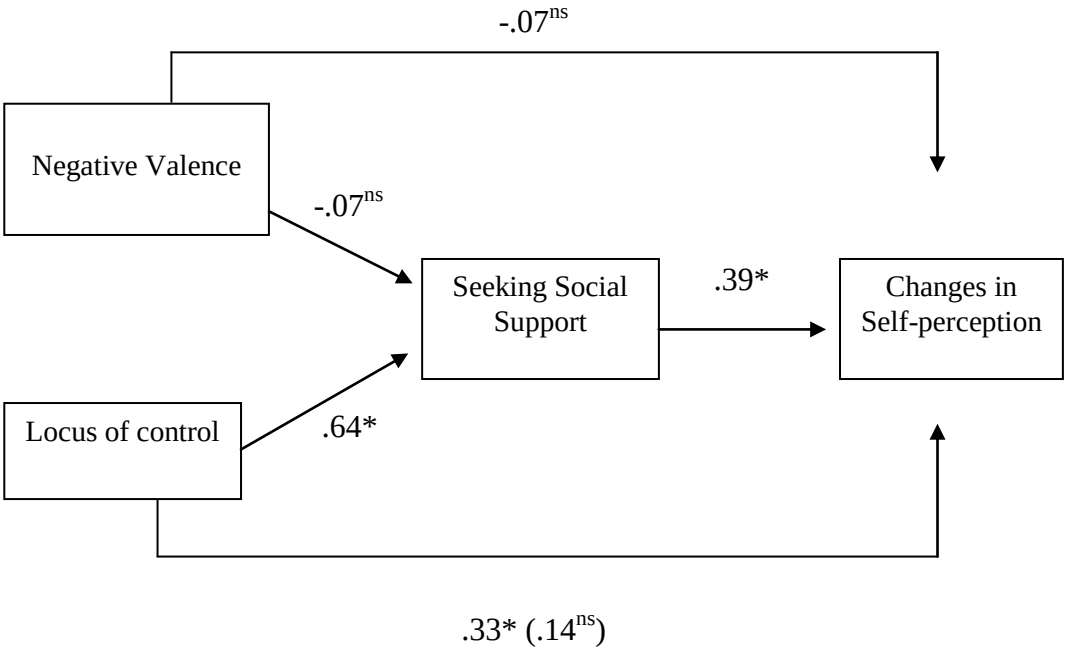
Seeking social support did not mediate the relationship between negative valence and changes in philosophy of life, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in philosophy of life (β = .33, p < .001). However, negative valence was not a significant predictor of changes in philosophy of life (β = .01, p = .92) and seeking social support (β = -.07, p = .45). Therefore, the relationship between negative valence and changes in philosophy of life was not mediated by seeking social support (See Figure 74).



*Note. * $p < .001$*

Figure 74. Negative Valence – Changes in Philosophy of Life and Locus of Control – Changes in Philosophy of Life Relationships Having Seeking Social Support as the Mediator

The relationship between negative valence and changes in self-perception was not mediated by seeking social support, because the conditions of mediation were not fulfilled. Seeking social support was a significant predictor of changes in self-perception (β = .39, p < .001). However, negative valence was not a significant predictor of changes in self-perception (β = -.07, p = .44) and seeking social support (β = -.07, p = .45). Therefore, seeking social support did not mediate the relationship between negative valence and changes in self-perception (See Figure 75).



*Note. * p < .001*

Figure 75. Negative Valence – Changes in Self-perception and Locus of Control – Changes in Self-perception Relationships Having Seeking Social Support as the Mediator

Table 8. The Summary of Mediation Models

IV	Mediator	DV	Mediation	Sobel
Extraversion	Problem-focused Coping	Posttraumatic Growth	Yes	Significant
Extraversion	Problem-focused Coping	Changes in Relationship with Others	No	
Extraversion	Problem-focused Coping	Changes in Philosophy of Life	No	

Table 8 (continued)

IV	Mediator	DV	Mediation	Sobel
Extraversion	Problem-focused Coping	Changes in Self-perception	Yes	Significant
Conscientiousness	Problem-focused Coping	Posttraumatic Growth	Yes	Significant
Conscientiousness	Problem-focused Coping	Changes in Relationship with Others	Yes	Significant
Conscientiousness	Problem-focused Coping	Changes in Philosophy of Life	No	
Conscientiousness	Problem-focused Coping	Changes in Self-perception	Yes	Significant
Agreeableness	Problem-focused Coping	Posttraumatic Growth	Yes	Significant
Agreeableness	Problem-focused Coping	Changes in Relationship with Others	Yes	Significant
Agreeableness	Problem-focused Coping	Changes in Philosophy of Life	No	
Agreeableness	Problem-focused Coping	Changes in Self-perception	Yes	Significant
Neuroticism	Problem-focused Coping	Posttraumatic Growth	No	
Neuroticism	Problem-focused Coping	Changes in Relationship with Others	No	
Neuroticism	Problem-focused Coping	Changes in Philosophy of Life	No	
Neuroticism	Problem-focused Coping	Changes in Self-perception	No	
Openness to Experience	Problem-focused Coping	Posttraumatic Growth	Yes	Significant
Openness to Experience	Problem-focused Coping	Changes in Relationship with Others	No	

Table 8 (continued)

IV	Mediator	DV	Mediation	Sobel
Openness to Experience	Problem-focused Coping	Changes in Philosophy of Life	Yes	Significant
Openness to Experience	Problem-focused Coping	Changes in Self-perception	Yes	Significant
Negative Valence	Problem-focused Coping	Posttraumatic Growth	No	
Negative Valence	Problem-focused Coping	Changes in Relationship with Others	No	
Negative Valence	Problem-focused Coping	Changes in Philosophy of Life	No	
Negative Valence	Problem-focused Coping	Changes in Self-perception	No	
Locus of Control	Problem-focused Coping	Posttraumatic Growth	Yes	Significant
Locus of Control	Problem-focused Coping	Changes in Relationship with Others	Yes	Significant
Locus of Control	Problem-focused Coping	Changes in Philosophy of Life	No	
Locus of Control	Problem-focused Coping	Changes in Self-perception	Yes	Significant
Extraversion	Emotion-focused Coping	Posttraumatic Growth	No	
Extraversion	Emotion-focused Coping	Changes in Relationship with Others	No	
Extraversion	Emotion-focused Coping	Changes in Philosophy of Life	No	
Extraversion	Emotion-focused Coping	Changes in Self-perception	Yes	Significant
Conscientiousness	Emotion-focused Coping	Posttraumatic Growth	Yes	Significant
Conscientiousness	Emotion-focused Coping	Changes in Relationship with Others	Yes	Significant

Table 8 (continued)

IV	Mediator	DV	Mediation	Sobel
Conscientiousness	Emotion-focused Coping	Changes in Philosophy of Life	No	
Conscientiousness	Emotion-focused Coping	Changes in Self-perception	Yes	Significant
Agreeableness	Emotion-focused Coping	Posttraumatic Growth	Yes	Significant
Agreeableness	Emotion-focused Coping	Changes in Relationship with Others	Yes	Significant
Agreeableness	Emotion-focused Coping	Changes in Philosophy of Life	No	
Agreeableness	Emotion-focused Coping	Changes in Self-perception	Yes	Significant
Neuroticism	Emotion-focused Coping	Posttraumatic Growth	No	
Neuroticism	Emotion-focused Coping	Changes in Relationship with Others	No	
Neuroticism	Emotion-focused Coping	Changes in Philosophy of Life	No	
Neuroticism	Emotion-focused Coping	Changes in Self-perception	No	
Openness to Experience	Emotion-focused Coping	Posttraumatic Growth	Yes	Significant
Openness to Experience	Emotion-focused Coping	Changes in Relationship with Others	No	
Openness to Experience	Emotion-focused Coping	Changes in Philosophy of Life	Yes	Significant
Openness to Experience	Emotion-focused Coping	Changes in Self-perception	Yes	Significant
Negative Valence	Emotion-focused Coping	Posttraumatic Growth	No	

Table 8 (continued)

IV	Mediator	DV	Mediation	Sobel
Negative Valence	Emotion-focused Coping	Changes in Relationship with Others	No	
Negative Valence	Emotion-focused Coping	Changes in Philosophy of Life	No	
Negative Valence	Emotion-focused Coping	Changes in Self-perception	No	
Locus of Control	Emotion-focused Coping	Posttraumatic Growth	Yes	Significant
Locus of Control	Emotion-focused Coping	Changes in Relationship with Others	Yes	Significant
Locus of Control	Emotion-focused Coping	Changes in Philosophy of Life	No	
Locus of Control	Emotion-focused Coping	Changes in Self-perception	Yes	Significant
Extraversion	Seeking Social Support	Posttraumatic Growth	No	
Extraversion	Seeking Social Support	Changes in Relationship with Others	No	
Extraversion	Seeking Social Support	Changes in Philosophy of Life	No	
Extraversion	Seeking Social Support	Changes in Self-perception	No	
Conscientiousness	Seeking Social Support	Posttraumatic Growth	No	
Conscientiousness	Seeking Social Support	Changes in Relationship with Others	No	
Conscientiousness	Seeking Social Support	Changes in Philosophy of Life	No	
Conscientiousness	Seeking Social Support	Changes in Self-perception	No	
Agreeableness	Seeking Social Support	Posttraumatic Growth	No	

Table 8 (continued)

IV	Mediator	DV	Mediation	Sobel
Agreeableness	Seeking Social Support	Changes in Relationship with Others	No	
Agreeableness	Seeking Social Support	Changes in Philosophy of Life	No	
Agreeableness	Seeking Social Support	Changes in Self-perception	No	
Neuroticism	Seeking Social Support	Posttraumatic Growth	No	
Neuroticism	Seeking Social Support	Changes in Relationship with Others	No	
Neuroticism	Seeking Social Support	Changes in Philosophy of Life	No	
Neuroticism	Seeking Social Support	Changes in Self-perception	No	
Openness to Experience	Seeking Social Support	Posttraumatic Growth	No	
Openness to Experience	Seeking Social Support	Changes in Relationship with Others	No	
Openness to Experience	Seeking Social Support	Changes in Philosophy of Life	No	
Openness to Experience	Seeking Social Support	Changes in Self-perception	No	
Negative Valence	Seeking Social Support	Posttraumatic Growth	No	
Negative Valence	Seeking Social Support	Changes in Relationship with Others	No	
Negative Valence	Seeking Social Support	Changes in Philosophy of Life	No	
Negative Valence	Seeking Social Support	Changes in Self-perception	No	
Locus of Control	Seeking Social Support	Posttraumatic Growth	Yes	Significant

Table 8 (continued)

IV	Mediator	DV	Mediation	Sobel
Locus of Control	Seeking Social Support	Changes in Relationship with Others	Yes	Significant
Locus of Control	Seeking Social Support	Changes in Philosophy of Life	No	
Locus of Control	Seeking Social Support	Changes in Self-perception	Yes	Significant

CHAPTER 4

DISCUSSION

This study aimed to investigate the relationship of posttraumatic growth with basic personality traits and locus of control and the mediator role of coping styles on these relationships. Firstly, the main results of the study (the effects of demographic variables on the relationship of independent variables with the dependent variable, the relationships between independent variables and the mediators, and the relationship of the mediators with the dependent variable) will be discussed. Afterwards, the mediation models will be presented. Finally, the clinical implications, limitations of the current study and directions for future research will be considered.

4.1. Results of the Study

4.1.1. The Effects of Demographic Variables on the Study Variables

The effects of some demographic variables (e.g., age, socioeconomic status, education, marital status, number of children and perceived controllability of disease) on the study variables were investigated. Firstly, age was not found to be related to posttraumatic growth in the current study. On the other hand, age was one of the

demographic variables predicting posttraumatic growth in the literature. For example; Cordova et al. (2007) found that younger age was associated with greater posttraumatic growth. Moreover, Belizzi (2004) did also state that younger cancer survivors experienced more posttraumatic growth compared to older cancer survivors.

Socioeconomic status was another demographic variable that was found to be associated with posttraumatic growth in the literature. It was found that income was positively correlated with HIV-related positive changes and higher education was associated with more positive changes. Moreover, income was one of the most significant predictors of HIV-related positive changes (Updegraff, Taylor, Kemeny, & Wyatt, 2002). However, the result of the present study was incongruous with the literature, because the results showed that there was no significant difference between breast cancer survivors with low and middle socioeconomic status on posttraumatic growth. On the other hand, the sample sizes of these two groups were disproportional. While low socioeconomic status group consisted of 21 participants, there were 84 breast cancer survivors with middle socioeconomic status. This disproportion between these two groups might have confounded the results.

Education was also found to be related to posttraumatic growth in the literature. According to the study of Weiss (2004), level of education was negatively correlated with posttraumatic growth of breast cancer survivors and it was also one of the predictors of PTG. Similarly, Updegraff et al. (2002) also found that education was correlated with HIV-related positive changes and it was one of the most significant predictors of HIV-related positive changes. However, contrary to the results of Weiss (2004), Updegraff et al. (2002) claimed that there was a positive

relationship between education and posttraumatic growth. On the other hand, contrary to the literature, the present study failed to find a relationship between education and posttraumatic growth.

In addition to these demographic variables, marital status and the number of children were also found to be unrelated to posttraumatic growth. However, perceived controllability of the disease was the only demographic variable that had a relationship with posttraumatic growth. It was found that there was a positive correlation between perceived controllability of the disease and posttraumatic growth.

4.1.2. The Relationship between Independent Variables and the Dependent Variable

In the literature, extraversion was found to be one of the personality factors that is associated with posttraumatic growth. Extraversion was positively correlated with posttraumatic growth and positive changes (Tedeschi & Calhoun, 1996; Val & Linley, 2006). Moreover, Sheikh (2004) stated that this personality trait was the only Big Five personality trait that predicts posttraumatic growth. The current findings are parallel to these studies. According to the results of the current study, as hypothesized, extraversion was one of the predictors of posttraumatic growth. Moreover, it was also a significant predictor of changes in self-perception that is one of the factors of posttraumatic growth. The results showed that breast cancer survivors high on extraversion reported higher levels of PTG and changes in self-perception.

The results about the relationship between openness to experience and posttraumatic growth were conflicting. Some research findings in the literature showed that there is no relationship between openness to experience and PTG (e.g., Tashiro & Frazier, 2003; Sheikh, 2004; Zoellner et al., 2008). However, there are also some research findings indicating that there is a positive relationship between openness to experience and PTG. For example; Jaarsma, Pool, Sanderman, and Ranchor (2006) reported that there is a positive correlation between openness to experience and PTG. Similar findings were obtained in the study of Tedeschi and Calhoun (1996). The current study demonstrated similar results with these two studies. As hypothesized, there was a positive relationship between openness to experience and PTG. Moreover, openness to experience was a significant predictor of two PTG factors, i.e., changes in philosophy of life and changes in self-perception. According to Maercker and Zoellner (2004), openness to experience may play a role in adjusting to stressful situation. In addition, Affleck and Tennen (1996) claimed that individuals high on openness to experience may be more likely to respond to an adverse event with a new philosophical orientation and life plans. Therefore, people high on openness to experience may be more likely to develop PTG.

In addition to extraversion and openness to experience, both conscientiousness and agreeableness personality traits were found to be positively associated with PTG; and they were also significant predictors of two PTG factors, which are changes in relationship with others and changes in self-perception. According to Tashiro and Frazier (2003), people high on agreeableness may experience positive change in their interpersonal relationships after adversity, because they are more likely to be warm, pleasant, kind, and cooperative. Similar to

agreeableness, because of the characteristics of conscientiousness personality trait (i.e., competence, order, achievement striving, self-discipline), people high on this trait may be more likely to develop PTG. Although there were supporting research findings in the literature (e.g., Tedeschi & Calhoun, 1996), there were also some studies that show adverse findings (e.g., Sheikh, 2004). In addition to conscientiousness and agreeableness, neuroticism was also a significant predictor of PTG in the current study, although there was no significant correlation between neuroticism and PTG. The literature about the relationship between neuroticism and PTG was parallel with the current study. For example; Lechner et al. (2003) and Jaarsma et al. (2006) failed to find a significant correlation between neuroticism and PTG.

The last personality trait, negative valence, was found to have no relationship with PTG in the current study. In terms of negative valence, to our knowledge, the current study is the first study examining the relationship between negative valence as a personality trait and PTG. There was no significant relationship between negative valence and PTG in the present study. However, the reliability of negative valence, one of the subscales of Basic Personality Traits Inventory, was relatively low. Therefore, the results about the relationship between negative valence and PTG should be interpreted with caution.

The relationship between locus of control and PTG has also been studied in the literature. There is a limited literature about this relationship and the findings of these studies were conflicting. In the study of Maercker and Herrie (2003), it was emphasized that internal locus of control is significantly associated with personal growth. On the other hand, in another study, there was no significant correlation

between locus of control and PTG (Cummings & Swickert, 2010). However, the current study stated that there was a significant positive correlation between locus of control and PTG. Moreover, locus of control was a significant predictor of PTG. Owing to the fact that greater locus of control scores indicate externality, this result suggested that participants who have external locus of control also endorse higher levels of PTG. Therefore, this study failed to verify the hypothesis suggesting that breast cancer survivors with internal locus of control would be more likely to develop PTG. Locus of control should be evaluated within the context of Turkish and Muslim culture. In Turkish and Muslim culture, fate takes an important place. In locus of control scale, there were some items emphasizing the importance of fate such as "If the person will be sick, it is not possible to prevent", "There is a very big role of fate on human life". This fatalistic approach of Turkish people may lead them to external locus of control. Moreover, Karancı and Acarturk (2005) claimed that Islamic religion advises people to take every necessary action and the God decides the rest. Therefore, fatalism may lead people to use problem-focused coping. This cultural background of the sample in the current study may explain the relationship between external locus of control, problem-focused coping, and PTG.

4.1.3. The Relationship between Independent Variables and Mediators

Extraversion was found to be significantly and positively correlated with problem-focused coping. In a parallel way, the results showed that extraversion was a significant predictor of problem-focused coping. Similarly, extraversion was asserted to be related with problem-focused coping in the literature. For example, Kardum and Krapić (2001) found that extraversion is positively associated with

problem-focused coping. In another study, extraversion personality trait was also positively correlated with indices of problem-focused coping (active coping, planning) (Roesch, Wee, & Vaughn, 2006). According to Nyklícek, Poot, & van Opstal (2010), extraversion was positively related with problem-focused coping. Contrary to problem-focused coping, there was no significant correlation between extraversion and emotion-focused coping. On the other hand, there were many studies stating a significant association between extraversion and emotion-focused coping (Kardum & Krapić, 2001; Nyklícek, Poot, & van Opstal, 2010; Roesch, Wee, & Vaughn, 2006). The relationship between extraversion and seeking social support coping was also examined in the current study. It was asserted that extraversion is not related to seeking social support coping.

In the literature, conscientiousness was stated to be related to problem-focused coping. In the study of Bartley and Roesch (2011), individuals higher on conscientiousness personality trait used more problem-focused coping. Similarly, conscientiousness was positively associated with problem-focused coping (Nyklícek, Poot, & van Opstal, 2010). Moreover, the study of Roesch, Wee, and Vaughn (2006) showed that this personality trait is significantly and positively correlated with problem-focused coping indices such as active coping and planning. The current study had similar results with the literature. According to the results, conscientiousness was positively correlated with problem-focused coping and it was a significant predictor of problem-focused coping. In addition to problem-focused coping, it was also emphasized that there is a relationship between conscientiousness and emotion-focused coping. The current study showed that conscientiousness is positively correlated with emotion-focused coping and it was a significant predictor

of emotion-focused coping. In a parallel way, Roesch, Wee, and Vaughn (2006) found that people high on conscientiousness use more indices of emotion-focused coping (positive reframing, humour, acceptance). On the other hand, the study of Nyklícek, Poot, and van Opstal (2010) showed that there is a significant, but negative relationship between conscientiousness and emotion-focused coping. In the current study, the relationship between conscientiousness and seeking social support coping was also examined. However, the current study failed to find a significant relationship between these two variables. Similarly, Bartley and Roesch (2011) claimed that there is no relationship between conscientiousness and social support coping.

The present study revealed that agreeableness was significantly and positively correlated with problem-focused coping. Moreover, agreeableness was a significant predictor of problem-focused coping. There were also similar findings in the literature. The studies showed that agreeableness was positively correlated with indices of problem-focused coping (Lawson, Bundy, Belchner, & Harvey, 2010; Roesch, Wee, & Vaughn, 2006). Moreover, Nyklícek, Poot, and van Opstal (2010) found that there is a positive correlation between agreeableness and problem-focused coping. In addition to problem-focused coping, emotion-focused coping was also found to be positively associated with agreeableness and agreeableness was a significant predictor of emotion-focused coping. Similar to the findings of the current study, the studies in the literature revealed a significant relationship between agreeableness and emotion-focused coping. However, the results showed contradicting statements about this relationship. While some researchers claimed a positive correlation between agreeableness and emotion-focused coping (Lawson,

Bundy, Belchner, & Harvey, 2010; Roesch, Wee, & Vaughn, 2006), other researchers stated negative association between these two variables (Nyklícek, Poot, & van Opstal, 2010). Moreover, the current study also examined the relationship between agreeableness and seeking social support coping and it was revealed that there is no relationship between agreeableness and seeking social support coping.

The studies in the literature about the relationship between neuroticism and coping had contradicting findings, but many studies showed that there is a relationship between neuroticism and coping strategies. For example; in their study, Kardum and Krapić (2001) asserted that neuroticism is positively related to problem-focused coping. On the other hand, some studies revealed that there was a negative relationship between neuroticism and problem-focused coping (Nyklícek, Poot, & van Opstal, 2010; Vollrath, Torgersen, & Alnæs, 1998). On the other hand, the result of the current study showed no significant relationship between neuroticism and problem-focused coping. In terms of emotion-focused coping, this coping style and its indices (e.g., emotional support) were predominantly and positively correlated with neuroticism personality trait (Kardum & Krapić, 2001; Nyklícek, Poot, & van Opstal, 2010; Roesch, Wee, & Vaughn, 2006). However, the current study failed to find a relationship between neuroticism and emotion-focused coping. In terms of seeking social support coping, there was no significant relationship between neuroticism and this coping strategy (Vollrath, Torgersen, & Alnæs, 1998). The result of the current study demonstrated similar results with this study, since neuroticism was not correlated with seeking social support coping.

The current study showed that openness to experience was positively correlated with problem-focused coping, and this personality trait was a significant

predictor of problem-focused coping. In a parallel way, many studies stated a significant relationship between openness to experience and problem-focused coping. For example; Nyklícek, Poot, and van Opstal (2010) found that this personality trait is positively associated with problem-focused coping. Similarly, it was asserted that people high on openness to experience use more indices of problem-focused coping such as active coping and planning (Lawson et al., 2010; Roesch, Wee, & Vaughn, 2006). In addition to problem-focused coping, emotion-focused coping was also positively correlated with openness to experience, and this personality trait was a significant predictor of emotion-focused coping in the present study. Many studies in the literature demonstrated similar results with the current study. It was emphasized that openness to experience was positively related to emotion-focused coping (Nyklícek, Poot, & van Opstal, 2010). Moreover, individuals high on openness to experience used more of indices of emotion-focused coping such as positive reframing, humour, acceptance, positive interpretation, and emotional support (Lawson et al., 2010; Roesch, Wee, & Vaughn, 2006). Contrary to problem-focused coping and emotion-focused coping, the current study showed no relationship between openness to experience and seeking social support coping.

The current study did also examine the relationship between negative valence and coping strategies. It was found that there was no significant relationship between negative valence and all three coping strategies. However, the reliability of negative valence, one of the subscales of Basic Personality Traits Inventory, was relatively low. Therefore, the results about the relationship between negative valence and coping strategies should be interpreted with caution. Furthermore, to our knowledge,

the current study was the first study in examining the relationship between negative valence personality trait and coping strategies.

The literature about the relationship between locus of control and coping strategies is limited and the findings show contradicting results. There were some studies suggesting a positive relationship between internal locus of control and problem-focused coping. It was stated that individuals with internal locus of control show higher problem-focused coping than individuals with external locus of control (Arslan, Dilmaç, & Hamarta, 2009). However, there were also some studies suggesting no association between locus of control and coping strategies (Brown et al., 2002; Scott et al., 2010). On the other hand, the results of the current study were not congruent with the literature in terms of locus of control. It was stated that there are positive and significant relationships between external locus of control and all three coping strategies. Moreover, locus of control was the predictor of these three coping strategies (i.e., problem-focused coping, emotion-focused coping and seeking social support coping).

4.1.4. The Relationship between Mediators and the Dependent Variable

In the current study, the relationship of mediators (ways of coping: problem-focused coping, emotion-focused coping, seeking social support) with the dependent variable (posttraumatic growth) were also examined. In the literature, there are also some studies investigating this relationship. For example; Loiselle, Devine, Reed-Knight, and Blount (2011) indicated that PTG is significantly and positively related to active and problem-focused coping strategies such as planful problem solving, positive reappraisal, and accepting responsibility. Similarly, Büyükaşık-Çolak et al.

(in press) stated that problem-focused coping is positively related to PTG and this coping strategy predicts PTG. Similar to these findings, the current study showed that problem-focused coping is significantly and positively correlated with PTG. Moreover, problem-focused coping was a significant predictor of both PTG and all of its factors (i.e., changes in relationship with others, changes in philosophy of life, and changes in self-perception). Problem-focused coping may lead to PTG, because active involvement in problems may lead individuals to have an enhancement in self-efficacy and self-confidence. Moreover, there are some overlapping points between problem-focused coping and PTG such as new perspective, maturity and positive interpretation. Therefore, people high on problem-focused coping may be more likely to develop PTG (Kesimci, Göral, & Gençöz, 2003).

In the literature, it is also claimed that emotion-focused coping has a relationship with PTG. In a study, it was found that greater use of emotion-focused coping was related to greater PTG (Büyükaşık-Çolak et al., in press). Moreover, it was one of the significant predictors of PTG. The current study demonstrated similar results with this study. The findings showed that the relationship between emotion-focused coping and PTG is positive and significant. Additionally, emotion-focused coping was significant predictor of both PTG and its three factors (i.e., changes in relationship with others, changes in philosophy of life, and changes in self-perception).

In the literature, it was also asserted that there is a relationship between seeking social support coping and PTG. In their meta-analytic review, Prati and Pietrantoni (2009) found that seeking social support is related to PTG. In a parallel way, the current study also stated that seeking social support coping is positively and

significantly correlated with PTG. Furthermore, seeking social support coping predicted both PTG and its factors (i.e., changes in relationship with others, changes in philosophy of life, and changes in self-perception).

4.1.5. The Summary of the Mediation Models

In the current study, the relationship among posttraumatic growth, basic personality traits, and locus of control; and the mediator role of coping styles on these relationships were investigated. As hypothesized, breast cancer survivors high on extraversion reported higher levels of PTG through higher use of problem-focused coping. Similarly, as hypothesized survivors high on openness to experience reported higher levels of PTG through higher use of problem-focused coping. In addition to survivors high on extraversion and openness to experience, individuals high on conscientiousness and agreeableness also reported higher levels of PTG through higher use of problem-focused coping. On the other hand, neuroticism was not a predictor of problem-focused coping. Therefore, problem-focused coping was not a mediator of the relationship between neuroticism and PTG. Moreover, this coping strategy did not mediate the relationship between negative valence and PTG, since there was no significant relationship between negative valence and PTG. Contrary to the hypothesis, survivors high on external locus of control reported higher levels of PTG through higher use of problem-focused coping.

With respect to emotion-focused coping, this coping style was also found to have a mediator role between some of independent variables and PTG. Breast cancer survivors high on conscientiousness, agreeableness, and openness to experience reported higher levels of PTG through higher use of emotion-focused coping.

However, extraversion, neuroticism and negative valence were not predictors of emotion-focused coping. Moreover, there was no significant relationship between negative valence and PTG. Consequently, emotion-focused coping was not a mediator of the relationships between these personality traits and PTG. Moreover, survivors high on external locus of control reported higher levels of PTG through higher use of emotion-focused coping.

In terms of seeking social support coping, this coping style was not a mediator of the relationship between basic personality traits and PTG. However, it was a mediator of the relationship between locus of control and PTG. Breast cancer survivors high on external locus of control reported higher level of PTG through higher use of seeking social support coping.

4.2. Clinical Implications

This study was conducted after doing a comprehensive literature review and to our knowledge publications on this topic are limited. Actually, as far as known, there are no publications studying the all four variables (i.e., basic personality traits, locus of control, coping, and PTG) that were examined in the current study. Thus, this study addressed a topic about which, to the best of our knowledge, almost nothing has been published.

In addition to contributing to the literature, it has also implications regarding psychological adjustment of breast cancer survivors. The findings of this study may help breast cancer survivors to foster their abilities to find positive outcomes of their traumatic experiences. Furthermore, this study proposed several paths to PTG. It did also indicate the people with specific personality characteristics and locus of control,

who are more likely to benefit from certain coping strategies to develop PTG. In the light of the findings of the current study, specific intervention programs may be developed for survivors with breast cancer by teaching appropriate coping strategies with regard to personality traits and locus of control to promote the development of PTG. Similarly, the study of Manne, Babb, Pinover, Horwitz and Ebbert (2004) showed that after six week of psychoeducation, including coping skills training, participants receiving intervention reported higher growth compared to control group. Thereby, psychologist in health and medical settings may help breast cancer survivors by constituting counseling programs and psychoeducation groups to develop PTG.

4.3. Limitations of the Present Study and Recommendations for Further Research

The current study has several limitations. First of all, the current study is a cross-sectional study. Therefore, the results do not imply causality. Moreover, Livneh (2000) claimed that coping is not static, but one-shot effort. Consequently, future studies should be longitudinal instead of cross-sectional to clarify causal roles of personality traits, locus of control, and specially coping on posttraumatic growth in breast cancer survivors. Second, many participants answered the questions in the questionnaires orally. Therefore, the participants might have given socially desirable answers. Third, the characteristics of the environment and traumatic events were suggested to be important for the development of posttraumatic growth in The Life Crises and Personal Growth Model (Schaefer & Moos, 1992). However, these characteristics were not taken into consideration in the present study. Fourth, the

reliability analyses of the current study showed that negative valence, one of the factors of Basic Personality Traits Inventory, has relatively low reliability scores. Because of low reliability of negative valence subscale, the results about negative valence should be interpreted with caution. Fifth, the present study is only generalizable to breast cancer survivors. The determinants of PTG and factors related to PTG may vary in other samples in the context of other type of traumatic exposure. And sixth, the participants of the present study consisted of the individuals who agreed to participate in the study. Therefore, the current study is based on a convenience sample and the results represent only the breast cancer patients who had willingness to participate. Due to representativeness issue, the results should be generalized to larger population with caution.

4.4. Conclusion

In the present study, the relationship of posttraumatic growth with basic personality traits and locus of control; and the mediator roles of coping strategies on these relationships were investigated. Most of the results of the present study were congruent with the literature. Intervention programs addressing this model may help breast cancer survivors to enhance some positive changes after their traumatic experience.

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APPENDICES

APPENDIX A: Informed Consent Form

Bu çalışma, Orta Doğu Teknik Üniversitesi Klinik Psikoloji Yüksek Lisans öğrencisi Nihan Önder tarafından yürütülmektedir. Çalışmanın amacı, travma sonrası gelişme, kişilik özellikleri ve kontrol odağı arasındaki ilişkiyi ve baş etme yöntemlerinin bu ilişki üzerinde aracı rolünün olup olmadığını anlamaya yönelik bilgi toplamaktır. Çalışmaya katılım tamamıyla gönüllülük esasına dayanmaktadır. Ankette, sizden kimlik belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Bireysel hiçbir değerlendirmeye yapılmayacaktır ve elde edilen bilgiler sadece bilimsel yayımlarda kullanılacaktır.

Anket, genel olarak kişisel rahatsızlık verecek soruları içermemektedir ve anketi cevaplamanız yaklaşık 20 dakikanızı alacaktır. Katılım sırasında sorulardan ya da başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Anket sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Nihan Önder (Tel: 0533 4498654; E-posta: e142494@metu.edu.tr) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyad İmza Tarih

APPENDIX B: Demographic Information and Cancer History Form

Yaşınız:

Eğitim düzeyiniz:

1. Resmi eğitimi yok 2. İlköğretim 3.Lise

4. Yüksek okul / Üniversite 5. Yüksek lisans / Doktora

Medeni haliniz:

1. Bekar _____ 2. Evli _____

3. Boşanmış _____ 4. Dul _____

Çalışıyor musunuz?: _____ Evet _____ Hayır

Evet ise mesleğiniz: _____

Çocuğunuz var mı?: _____ Evet _____ Hayır

Evet ise kaç tane? _____

Yaşamınızın çoğunun geçtiği yer:

1. Metropol (İstanbul, Ankara, İzmir) 2. Şehir

3. Kasaba 4. Köy

Ekonomik durumunuzu en iyi hangi seçenek yansıtıyor?

Düşük _____

Orta _____

Yüksek _____

Ne kadar süre önce hasta olduğunuzu öğrendiniz? _____

Tanı aldığınızda hastalığınız kaçıncı evredeydi?:

1. Birinci evre _____ 2. İkinci evre _____

3. Üçüncü evre _____ 4. Dördüncü evre _____

Şu anda herhangi bir tedavi görüyor musunuz? _____ Evet _____ Hayır

Evet ise hangisi? Kemoterapi _____

Radyoterapi _____

Hormon tedavisi _____

Kanserin ne kadar kontrol edilebilir bir hastalık olduğunu düşünüyorsunuz?

Hiç — Orta — Tamamen

(0) (1) (2) (3) (4)

Hastalığınızın ne kadar ciddi olduğunu düşünüyorsunuz?

Hiç — Orta — Tamamen

(0) (1) (2) (3) (4)

APPENDIX C: Basic Personality Traits Inventory

YÖNERGE:

Aşağıda size uyan ya da uymayan pek çok kişilik özelliği bulunmaktadır. Bu özelliklerden her birinin sizin için ne kadar uygun olduğunu ilgili rakamı daire içine alarak belirtiniz.

Örneğin;

Kendimi ..... biri olarak görüyorum.

Hiç uygun değil	**Uygun değil**	**Kararsızım**	**Uygun**	**Çok uygun**
1	**2**	**3**	**4**	**5**

		Hiç uygun değil	Uygun değil	Kararsızım	Uygun	Çok uygun
1	Aceleci	1	2	3	4	5
2	Yapmacık	1	2	3	4	5
3	Duyarlı	1	2	3	4	5
4	Konuşkan	1	2	3	4	5
5	Kendine güvenen	1	2	3	4	5
6	Soğuk	1	2	3	4	5
7	Utangaç	1	2	3	4	5
8	Paylaşımcı	1	2	3	4	5
9	Geniş / rahat	1	2	3	4	5
10	Cesur	1	2	3	4	5
11	Agresif(Saldırgan)	1	2	3	4	5
12	Çalışkan	1	2	3	4	5
13	İçten pazarlıklı	1	2	3	4	5
14	Girişken	1	2	3	4	5
15	İyi niyetli	1	2	3	4	5
16	İçten	1	2	3	4	5
17	Kendinden emin	1	2	3	4	5
18	Huysuz	1	2	3	4	5
19	Yardımsever	1	2	3	4	5
20	Kabiliyetli	1	2	3	4	5
21	Üşengeç	1	2	3	4	5
22	Sorumsuz	1	2	3	4	5
23	Sevecen	1	2	3	4	5
24	Pasif	1	2	3	4	5
25	Disiplinli	1	2	3	4	5
26	Açgözlü	1	2	3	4	5
27	Sinirli	1	2	3	4	5
28	Canayakın	1	2	3	4	5
29	Kızgın	1	2	3	4	5
30	Sabit fikirli	1	2	3	4	5
31	Görgüsüz	1	2	3	4	5
32	Durgun	1	2	3	4	5
33	Kaygılı	1	2	3	4	5
34	Terbiyesiz	1	2	3	4	5
35	Sabırsız	1	2	3	4	5
36	Yaratıcı (Üretken)	1	2	3	4	5
37	Kaprisli	1	2	3	4	5
38	İçine kapanık	1	2	3	4	5
39	Çekingen	1	2	3	4	5
40	Alıngan	1	2	3	4	5
41	Hoşgörülü	1	2	3	4	5
42	Düzenli	1	2	3	4	5
43	Titiz	1	2	3	4	5
44	Tedbirli	1	2	3	4	5
45	Azimli	1	2	3	4	5

APPENDIX D: Locus of Control Scale

Bu anket, insanların yaşama ilişkin bazı düşüncelerini belirlemeyi amaçlamaktadır. Sizden, bu maddelerde yansıtılan düşüncelere ne ölçüde katıldığınızı ifade etmeniz istenmektedir.

Bunun için, her maddeyi dikkatle okuyunuz ve o maddede ifade edilen düşüncenin *sizin* düşüncelerinize uygunluk derecesini belirtiniz. Bunun için de, her ifadenin karşısındaki seçeneklerden sizin görüşünüzü yansıtan kutucuğa bir (X) işareti koymanız yeterlidir. "Doğru" ya da "yanlış" cevap diye bir şey söz konusu değildir.

Tüm maddeleri eksiksiz olarak ve i ç t e n l i k l e cevaplayacağınızı umuyor ve araştırmaya yardımcı olduğunuz için çok teşekkür ediyoruz.

	Hiç uygun değil	**Pek uygun değil**	**Uygun**	**Oldukça uygun**	**Tamamen uygun**
1. İnsanın yaşamındaki mutsuzlukların çoğu, biraz da şanssızlığına bağlıdır.					
2. İnsan ne yaparsa yapsın üşütüp hasta olmanın önüne geçemez.					
3. Bir şeyin olacağı varsa eninde sonunda mutlaka olur.					
4. İnsan ne kadar çabalarsa çabalasın, ne yazıkki değeri genellikle anlaşılmaz.					
5. İnsanlar savaşları önlemek için ne kadar çaba gösterirlerse göstersinler, savaşlar daima olacaktır.					
6. Bazı insanlar doğuştan şanslıdır.					
7. İnsan ilerlemek için güç sahibi kişilerin gönlünü hoş tutmak zorundadır.					
8. İnsan ne yaparsa yapsın, hiç bir şey istediği gibi sonuçlanmaz.					
9. Bir çok insan, raslantıların yaşamlarını ne derece etkilediğinin farkında değildir.					
10. Bir insanın halen ciddi bir hastalığa yakalanmamış olması sadece bir şans meselesidir.					
11. Dört yapraklı yonca bulmak insana şans getirir.					
12. İnsanın burcu hangi hastalıklara daha yatkın olacağını belirler.					

	Hiç uygun değil	Pek uygun değil	Uygun	Oldukça uygun	Tamamen uygun
13. Bir sonucu elde etmede insanın neleri bildiği değil, kimleri tanıdığı önemlidir.					
14. İnsanın bir günü iyi başladıysa iyi; kötü başladıysa da kötü gider.					
15. Başarılı olmak çok çalışmaya bağlıdır; şansın bunda payı ya hiç yoktur ya da çok azdır.					
16. Aslında şans diye bir şey yoktur.					
17. Hastalıklar çoğunlukla insanların dikkatsizliklerinden kaynaklanır.					
18. Talihsizlik olarak nitelenen durumların çoğu, yetenek eksikliğinin, ihmalin, tembelliğin ve benzeri nedenlerin sonucudur.					
19. İnsan, yaşamında olabilecek şeyleri kendi kontrolü altında tutabilir.					
20. Çoğu durumda yazı-tura atarak da isabetli kararlar verilebilir.					
21. İnsanın ne yapacağı konusunda kararlı olması, kadere güvenmesinden daima iyidir.					
22. İnsan fazla bir çaba harcamasa da, karşılaştığı sorunlar kendiliğinden çözülür.					
23. Çok uzun vadeli planlar yapmak herzaman akıllıca olmayabilir, çünkü bir çok şey zaten iyi ya da kötü şansa bağlıdır.					
24. Bir çok hastalık insanı yakalar ve bunu önlemek mümkün değildir.					
25. İnsan ne yaparsa yapsın, olabilecek kötü şeylerin önüne geçemez.					
26. İnsanın istediğini elde etmesinin talihle bir ilgisi yoktur.					
27. İnsan kendisini ilgilendiren bir çok konuda kendi başına doğru kararlar alabilir.					
28. Bir insanın başına gelenler, temelde kendi yaptıklarının sonucudur.					
29. Halk, yeterli çabayı gösterse siyasal yolsuzlukları ortadan kaldırabilir.					
30. Şans ya da talih hayatta önemli bir rol oynamaz.					
31. Sağlıklı olup olmamayı belirleyen esas şey insanların kendi yaptıkları ve alışkanlıklarıdır.					
32. İnsan kendi yaşamına temelde kendisi yön verir.					

	Hiç uygun değil	Pek uygun değil	Uygun	Oldukça uygun	Tamamen uygun
33. İnsanların talihsizlikleri yaptıkları hataların sonucudur.					
34. İnsanlarla yakın ilişkiler kurmak, tesadüflere değil, çaba göstermeye bağlıdır.					
35. İnsanın hastalanacağı varsa hastalanır; bunu önlemek mümkün değildir.					
36. İnsan bugün yaptıklarıyla gelecekte olabilecekleri değiştirebilir.					
37. Kazalar, doğrudan doğruya hataların sonucudur.					
38. Bu dünya güç sahibi bir kaç kişi tarafından yönetilmektedir ve sade vatandaşın bu konuda yapabileceği fazla bir şey yoktur.					
39. İnsanın dini inancının olması, hayatta karşılaşacağı bir çok zorluğu daha kolay aşmasına yardım eder.					
40. Bir insan istediği kadar akıllı olsun, bir işe başladığında şansı yaver gitmezse başarılı olamaz.					
41. İnsan kendine iyi baktığı sürece hastalıklardan kaçınabilir.					
42. Kaderin insan yaşamı üzerinde çok büyük bir rolü vardır.					
43. Kararlılık bir insanın istediği sonuçları almasında en önemli etkendir.					
44. İnsanlara doğru şeyi yaptırmak bir yetenek işidir; şansın bunda payı ya hiç yoktur ya da çok azdır.					
45. İnsan kendi kilosunu, yiyeceklerini ayarlayarak kontrolü altında tutabilir.					
46. İnsanın yaşamının alacağı yönü, çevresindeki güç sahibi kişiler belirler.					
47. Büyük ideallere ancak çalışıp çabalayarak ulaşılabilir.					

APPENDIX E: Turkish Ways of Coping Inventory

Aşağıda, önemli olabilecek olaylar karşısında kişilerin davranış, düşünce ve tutumlarını belirten bazı cümleler verilmiştir. Lütfen her cümleyi dikkatle okuyunuz. Yaşamınızda karşılaştığınız sorunlarla başa çıkmak için, bu cümlelerde anlatılanları ne sıklıkla kullandığınızı size uygun gelen kutuyu (X) ile işaretleyiniz. Hiçbir cümleyi cevapsız bırakmamaya çalışınız. Her cümle ile ilgili yalnız bir cevap kategorisini işaretleyiniz.

	Hiç uygun değil	Pek uygun değil	Uygun	Oldukça uygun	Çok uygun
1. Aklımı kurcalayan şeylerden kurtulmak için değişik işlerle uğraşırım					
2. Bir sıkıntım olduğunu kimsenin bilmesini istemem					
3. Bir mucize olmasını beklerim					
4. İyimser olmaya çalışırım					
5. "Bunu da atlatırsam sırtım yere gelmez" diye düşünürüm					
6. Çevremdeki insanlardan problemi çözmede bana yardımcı olmalarını beklerim					
7. Bazı şeyleri büyütmemeye üzerinde durmamaya çalışırım					
8. Sakin kafayla düşünmeye ve öfkelenmemeye çalışırım					
9. Bu sıkıntılı dönem bir an önce geçsin isterim					
10. Olayın değerlendirmesini yaparak en iyi kararı vermeye çalışırım					
11. Konuyla ilgili olarak başkalarının ne düşündüğünü anlamaya çalışırım					
12. Problemin kendiliğinden hallolacağına inanırım					
13. Ne olursa olsun kendime direnme ve mücadele etme gücü hissederim					
14. Başkalarının rahatlamama yardımcı olmalarını beklerim					
15. Kendime karsı hoşgörülü olmaya çalışırım					
16. Olanları unutmaya çalışırım					
17. Telaşımı belli etmemeye ve sakin olmaya çalışırım					
18. "Basa gelen çekilir" diye düşünürüm					
19. Problemin ciddiyetini anlamaya çalışırım					
20. Kendimi kapana sıkışmış gibi hissederim					
21. Duygularımı paylaştığım kişilerin bana hak vermesini isterim					
22. Hayatta neyin önemli olduğunu keşfederim					
23. "Her işte bir hayır vardır" diye düşünürüm					
24. Sıkıntılı olduğumda her zamandakinden fazla uyurum					

25. İçinde bulunduğum kötü durumu kimsenin bilmesini istemem					
26. Dua ederek Allah'tan yardım dilerim					
27. Olayı yavaşlatmaya ve böylece kararı ertelemeye çalışırım					
28. Olanla yetinmeye çalışırım					
29. Olanları kafama takıp sürekli düşünmekten kendimi alamam					
30. İçimde tutmaktansa paylaşmayı tercih ederim					
31. Mutlaka bir yol bulabileceğime inanır, bu yolda uğraşırım					
32. Sanki bu bir sorun değilmiş gibi davranırım					
33. Olanlardan kimseye söz etmemeyi tercih ederim					
34. "İş olacağına varır" diye düşünürüm					
35. Neler olabileceğini düşünüp ona göre davranmaya çalışırım					
36. İşin içinden çıkamayınca "elimden bir şey gelmiyor" der, durumu olduğu gibi kabullenirim					
37. İlk anda aklıma gelen kararı uygularım					
38. Ne yapacağıma karar vermeden önce arkadaşlarımın fikrini alırım					
39. Her şeye yeniden başlayacak gücü bulurum					
40. Problemin çözümü için adak adarım					
41. Olaylardan olumlu bir şey çıkarmaya çalışırım					
42. Kırgınlığımı belirtirsem kendimi rahatlamış hissederim					
43. Alın yazısına ve bunun değişmeyeceğine inanırım					
44. Soruna birkaç farklı çözüm yolu ararım					
45. Basıma gelenlerin herkesin başına gelebilecek şeyler olduğuna inanırım					
46. "Olanları keşke değiştirebilseydim" derim					
47. Aile büyüklerine danışmayı tercih ederim					
48. Yaşamla ilgili yeni bir inanç geliştirmeye çalışırım					
49. "Her şeye rağmen elde ettiğim bir kazanç vardır" diye düşünürüm					
50. Gururumu koruyup güçlü görünmeye çalışırım					
51. Bu işin kefaretini (bedelini) ödemeye çalışırım					
52. Problemi adım adım çözmeye çalışırım					
53. Elimden hiçbir şeyin gelmeyeceğine inanırım					
54. Problemin çözümü için bir uzmana danışmanın en iyi yol olacağına inanırım					
55. Problemin çözümü için hocaya okunurum					
56. Her şeyin istediğim gibi olmayacağına inanırım					
57. Bu dertten kurtulayım diye fakir fukaraya sadaka veririm					

58. Ne yapılacağını planlayıp ona göre davranırım					
59. Mücadeleden vazgeçerim					
60. Sorunun benden kaynaklandığını düşünürüm					
61. Olaylar karşısında "kaderim buymuş" derim					
62. Sorunun gerçek nedenini anlayabilmek için başkalarına danışırım					
63. "Keşke daha güçlü bir insan olsaydım" diye düşünürüm					
64. Nazarlık takarak, muska taşıyarak benzer olayların olmaması için önlemler alırım					
65. Ne olup bittiğini anlayabilmek için sorunu enine boyuna düşünürüm					
66. "Benim suçum ne" diye düşünürüm					
67. "Allah'ın takdiri buymuş" diye kendimi teselli ederim					
68. Temkinli olmaya ve yanlış yapmamaya çalışırım					
69. Bana destek olabilecek kişilerin varlığını bilmek beni rahatlatır					
70. Çözüm için kendim bir şeyler yapmak istemem					
71. "Hep benim yüzümden oldu" diye düşünürüm					
72. Mutlu olmak için başka yollar ararım					
73. Hakkımı savunabileceğime inanırım					
74. Bir kişi olarak iyi yönde değiştiğimi ve olgunlaştığımı hissederim					

APPENDIX F: Posttraumatic Growth Inventory

Aşağıda hastalığınızdan dolayı yaşamınızda olabilecek bazı değişiklikler verilmektedir. Her cümleyi dikkatle okuyunuz ve belirtilen değişikliğin sizin için ne derece gerçekleştiğini aşağıdaki ölçeği kullanarak belirtiniz.

0= Hastalığımdan dolayı böyle bir değişiklik yaşamadım
1= Hastalığımdan dolayı bu değişikliği çok az derecede yaşadım
2= Hastalığımdan dolayı bu değişikliği az derecede yaşadım
3= Hastalığımdan dolayı bu değişikliği orta derecede yaşadım
4= Hastalığımdan dolayı bu değişikliği oldukça fazla derecede yaşadım
5= Hastalığımdan dolayı bu değişikliği aşırı derecede yaşadım

	Hiç yaşamadım					**Aşırı derecede yaşadım**
1. Hayatıma verdiğim değer artı.	0	1	2	3	4	5
2. Hayatımın kıymetini anladım.	0	1	2	3	4	5
3. Yeni ilgi alanları geliştirdim.	0	1	2	3	4	5
4. Kendime güvenim arttı.	0	1	2	3	4	5
5. Manevi konuları daha iyi anladım.	0	1	2	3	4	5
6. Zor zamanlarda başkalarına güvenebileceğimi anladım.	0	1	2	3	4	5
7. Hayatıma yeni bir yön verdim.	0	1	2	3	4	5
8. Kendimi diğer insanlara daha yakın hissetmeye başladım.	0	1	2	3	4	5
9. Duygularımı ifade etme isteğim arttı.	0	1	2	3	4	5
10. Zorluklarla başa çıkabileceğimi anladım.	0	1	2	3	4	5
11. Hayatımı daha iyi şeyler yaparak geçirebileceğimi anladım.	0	1	2	3	4	5
12. Olayları olduğu gibi kabullenmeyi öğrendim.	0	1	2	3	4	5

13. Yaşadığım her günün değerini anladım.	0	1	2	3	4	5
14. Hastalığımdan sonra benim için yeni fırsatlar doğdu.	0	1	2	3	4	5
15. Başkaların karşı şefkat hislerim arttı.	0	1	2	3	4	5
16. İnsanlarla ilişkilerimde daha fazla gayret göstermeye başladım.	0	1	2	3	4	5
17. Değişmesi gereken şeyleri değiştirmek için daha fazla gayret göstermeye başladım.	0	1	2	3	4	5
18. Dini inancım daha güçlendi.	0	1	2	3	4	5
19. Düşündüğümden daha güçlü olduğumu anladım.	0	1	2	3	4	5
20. İnsanların ne kadar iyi olduğu konusunda çok şey öğrendim.	0	1	2	3	4	5
21. Başkalarına ihtiyacım olabileceğini kabul etmeyi öğrendim.	0	1	2	3	4	5

APPENDIX G: Tez Fotokopisi İzin Formu

TEZ FOTOKOPİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü	
Sosyal Bilimler Enstitüsü	X
Uygulamalı Matematik Enstitüsü	
Enformatik Enstitüsü	
Deniz Bilimleri Enstitüsü	

YAZARIN

Soyadı : ÖNDER
Adı : NİHAN
Bölümü : KLİNİK PSİKOLOJİ YÜKSEK LİSANS PROGRAMI

TEZİN ADI (İngilizce) : The Mediating Role of Coping Strategies in the Basic Personality Traits – PTG and Locus of Control – PTG Relationships in Breast Cancer Patients

TEZİN TÜRÜ : Yüksek Lisans [X] Doktora [ ]

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. [X]

2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullanıcılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

Yazarın imzası ..... Tarih .....