Resilience and Religious Coping as Moderators in The Interaction of Trait Anxiety and Pain Catastrophizing*

Resiliensi dan Coping Religius sebagai Moderator di antara Interaksi Trait Anxiety *dan* Pain Catastrophizing*

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KATA KUNCI *coping religius, kecemasan, nyeri kronis, pain catastrophizing, resiliensi*

ABSTRACT *Chronic pain in young adults can affect daily activity ranging from interfering with work productivity, restricting social life, intruding on developmental tasks, and lessening the quality of life, to triggering psychological disorders. This condition can be worse if individuals with chronic pain have anxiety issue that makes them engage in pain catastrophizing, i.e., thinking about the pain fatally. In discussing chronic pain, previous studies sought the negative factors around pain experience. Nowadays, professionals pay more attention to the positive factor, like resilience (ability to bounce back). Besides, when dealing with negative life events, Indonesian also tend to implement religious culture, values, and practices. In this study, the author examines the role of resilience and religious coping as moderators in the interaction of trait anxiety and pain catastrophizing. A total of 275 individuals with chronic pain aged 18-35 participated in this study. Participants informed their consent and filled out a set of questionnaires that described their pain experiences. The regression analysis results show that positive religious coping has a moderating role in the interaction of trait anxiety and pain catastrophizing. Having a good connection with God or a higher being, as well as others and oneself, can help chronic pain patients deal with their pain. From this finding, professionals can consider positive religious coping an intervention target when helping chronic pain patients.*

ABSTRAK *Nyeri kronis pada populasi dewasa muda dapat mengganggu aktivitas sehari-hari para penderita. Hal ini termasuk menghambat produktivitas kerja, mengganggu kehidupan sosial, mengancam tugas-tugas perkembangan, mengurangi kualitas hidup, serta dapat memunculkan gangguan psikologis. Kondisi ini dapat menjadi lebih parah ketika penderita nyeri kronis*

memiliki kecemasan yang membuatnya terlibat pada pain catastrophizing*, yaitu melihat nyerinya secara berlebihan. Dalam membahas nyeri kronis, studi terdahulu banyak meneliti faktor-faktor negatif seputar pengalaman nyeri. Para profesional sekarang sudah mulai memberi perhatian khusus pada faktor-faktor positifnya, seperti faktor resiliensi (kemampuan untuk 'bangkit'). Di samping itu, kekhasan budaya, nilai, dan praktik keagamaan di Indonesia juga banyak digunakan saat menghadapi bencana, termasuk kondisi nyeri. Pada studi ini, penulis ingin melihat peran resiliensi dan religious coping sebagai moderator di antara interaksi* trait anxiety *dan* pain catastrophizing*. Penelitian dilakukan terhadap 275 penderita nyeri di Indonesia berusia 18-35 tahun. Partisipan memberi persetujuan untuk megikuti penelitian ini dan mengisi kuesioner yang menggambarkan pengalaman nyeri mereka. Hasil analisis regresi menunjukkan bahwa* positive religious coping *berperan sebagai moderator dalam interaksi* trait anxiety *dan* pain catastrophizing*. Memiliki hubungan yang baik dengan Tuhan, sesama, dan diri sendiri dapat membantu penderita nyeri kronis dalam menghadapi nyerinya. Melihat hasil studi ini, profesional dapat mempertimbangkan* positive religious coping *sebagai salah satu sasaran inervensi saat menangani pasien nyeri kronis.*

INTRODUCTION

The 2018 Basic Health Research (RISKESDAS) in Indonesia reported at least 1 out of 10 Indonesians were diagnosed with joint pains (Badan Penelitian dan Pengembangan Kesehatan, 2019). Indonesians aged 15 years have reported having pain. The prevalence of the age group 15-24, 25-34, and 35-44 are 1.2 percent, 3.1 percent, and 6.3 percent, respectively. Studies from several hospitals in Indonesia also found that the prevalence of pain in patients under 45 years old ranged from 25 to 50 percent (Djais & Kalim, 2002; Purwata et al., 2015). Other studies also reported that the highest prevalence of low back pain is in the third decade of individuals' life (Diepenmaat et al., 2006; Kopec et al., 2004).

Pain in young adults can threaten their productivity and developmental task (Newman & Newman, 2015; Stommen et al., 2012). It has been found that pain along with psychological stress decreases work performance and daily activity(Blyth et al., 2001; Kawai et al., 2017). Chronic pain also interferes with daily life, social life, and increases emotional distress, such as anxiety, anger, frustration, and depression (Nicholas et al., 2019). Pain correlates with psychological disorders, such as mood disorder, anxiety disorder, and alcohol abuse or dependence (Demyttenaere et al., 2007). In short, chronic pain at productive age lessens the quality of life (Narita et al., 2006; Yuniati & Kamso, 2020).

In young adults, one common issue that can be found is anxiety (Barlow, 2004; Lavoie, 2013). The effect of anxiety in individuals with chronic pain is more likely to be more severe if they tend to be anxious a lot of time. This negative psychological factor feeds into catastrophic thinking, particularly when one is experiencing pain (Linton & Shaw, 2011). Individuals with trait anxiety tend to worry about many aspects of their life, including their pain. They become more cautious of their physical sensation, pay more attention to their injured body parts, and interpret the

sensation more negatively (Gidron, 2013). Trait anxiety, specifically, can lower the threshold of how painful and threatening the pain is (Moix et al., 2011), making their pain experience worse and leading to poor health conditions.

While past studies paid more attention to vulnerability factors, such as anxiety and pain catastrophizing, recently, researchers like Sturgeon and Zautra (2013), Pulvers and Hood (2013), and Slepian et al. (2019) have started to examine the protective factors. They consider resilience when learning about individuals' pain experiences. With resilience, individuals who suffer from chronic pain can adaptively manage their situation. They report decreased pain intensity, depression symptoms, and physical dysfunction and experience more positive affect (Ong et al., 2010; Slepian et al., 2019). Individuals with high resilience show a lower pain catastrophizing level, particularly in one of its dimensions, namely rumination (Ankawi et al., 2017; Ong et al., 2010; Trompetter et al., 2017). Therefore, resilience encourages pain recovery (López-Martínez et al., 2009) by promoting positive factors and demoting negative experiences.

Besides resilience, this study proposes religious coping as the other positive factor when dealing with pain. It is essential to consider religion and religious practice in Indonesia. Religion in Indonesia is not only about being obedient to God (Ropi, 2017). Religious values and practices are incorporated into the daily life of Indonesian and serve as communal identity as well (Bunge & Vreeland, 1983; Ropi, 2017). When dealing with health and sickness, Indonesian tend to pray more, ask others for prayer, or come to religious leaders. A systematic review from Ferreira-Valente et al. (2022) has concluded that believing in God or higher power may contribute to positive psychological adjustment to pain.

This current study examined the role of resilience and religious coping as moderators between trait anxiety and pain catastrophizing in young adults with chronic pain. The tendency of young adults to be anxious (Goodwin et al., 2020) encourages them to engage in pain catastrophizing. Studies showed a positive influence of resilience in pain experience that help patients deal with chronic pain (Ramírez-Maestre et al., 2012) and positive emotion (Ong et al., 2010). Religious coping also influenced the positive adjustment to pain through positive mood (Keefe et al., 2001) and positive reappraisal (Büssing et al., 2009), as well as lessen anxiety in general (Ano & Vasconcelles, 2005). Resilience and religious coping as moderators were expected to act as buffers between trait anxiety and pain catastrophizing. According to previous research (Eifert et al., 1992; Gidron, 2013; Moix et al., 2011; Slepian et al., 2019), trait anxiety influenced pain catastrophizing more than state anxiety. Therefore, this research focused more on trait anxiety, while state anxiety was examined as a covariate. Negative religious coping, which is positively associated with negative psychological adjustment (Ano & Vasconcelles, 2005; Lucchetti et al., 2012), was examined as a covariate as well.

METHODS

Participants and Procedures

This study was part of longitudinal research about chronic pain in Indonesia. The ethical committee of the Faculty of Psychology, Universitas Indonesia had approved the ethical of the study (letter number:646/FPsi.KomiteEtik/PDP,04.00/2019). Due to the pandemic, data collection was done mainly through online questionnaires. Only 31% of the data in this study were collected through direct contact in 3 medical clinics in Central Java.

According to the many instruments used in the original study, the questionnaire was divided into two parts. Participants who completed the online questionnaire could choose to complete the questionnaire in one sitting or continue at another time. The author sent the second part of the

questionnaire to participants 3 to 7 days later. Participants who completed the offline questionnaire opt to take a break in the middle of data collection. Informed consent was obtained from all participants included in the study.

For this study, the inclusion criteria were 1) Indonesian, 2) young adults between 18 and 35 years old, 3) experiencing chronic pain for more than three months in these areas: stomach, waist, arm and hand, leg and foot, joint, bone, muscle, low back, head, tooth, chest, pain during menstruation and intercourse. Those whose pain was caused by cancer are excluded. All instruments used in this study were translated into Indonesian.

Measures

State-Trait Anxiety Inventory (STAI; Spielberger, 2010) was used to assess state and trait anxiety. The complete 20 items of the trait anxiety scale were administered. The scale describes how often participants experience anxiety-related feelings and thoughts. Participants gave responses by scoring each item on a 4-point scale. A low total score indicated a low trait anxiety level, and a high score indicated a high trait anxiety level (Tang & Gibson, 2005). The author used the short version of the state anxiety scale developed by Marteau and Bekker (1992). Participants reported their current anxiety feelings when completing the questionnaire by scoring each item on a 4-point scale. Participants who had 34-36 as a total score had normal state anxiety levels. Both scales had been translated into Indonesian. The trait anxiety scale has internal consistency scores between 0.36 – 0.78 with a coefficient alpha of 0.94. The state anxiety subscale has internal consistency scores between 0.60 – 0.71 and a coefficient alpha of 0.84.

Pain Catastrophizing Scale (PCS; Sullivan, 2009) was used to assess one's tendency to catastrophize their pain. The 13-item scale consists of three dimensions, i.e., rumination, magnification, and helplessness. Participants were asked to reflect on their past pain experiences and rated how often they felt or thought as what the scale stated. Items were rated on a scale from 0 to 4. The final scores consisted of one total PCS score and three scores for each dimension. A high total score indicated that participants tend to overreport their pain. The Indonesian version of PCS was validated in assessing pain catastrophizing and has a coefficient alpha of 0.93 and internal consistency of each item between 0.53 – 0.78.

Resilience, or one's ability to bounce back, was assessed with the Brief Resilience Scale (BRS; Smith et al., 2008). In giving responses, participants rated their degree of agreement on each of the 6 items on a 5-point scale. The average sum score was the total score, with a high score indicating a high resilience level. BRS had an adequate validity and reliability (Smith et al., 2008).

Religious coping, defined as the ability to deal with negative life events by connecting to something that is perceived as sacred (Pargament et al., 2011), was assessed by The Brief RCOPE. The 14-item scale reflected positive religious coping (i.e., having a secure relationship with God or higher power, connectedness with others, and a benevolent life view) and negative religious coping (i.e., having tension and struggle in connecting to God, others, and oneself). Participants reported how typical they use religious coping in dealing with stressful events with a 4-point response scale. A high score in each subscale indicated a high tendency to use religious coping. The translated version of the positive and negative subscale had coefficient alpha 0.91 and 0.85, while internal consistency is between 0.59 – 0.82 and 0.42 – 0.70.

Analysis

Data obtained were analyzed using descriptive, correlational, and regression analysis methods. Descriptive analysis was used to see participants' demographic details, including frequency, average, and

presentation of participants' characteristics. Correlational analysis was conducted to see the interaction of the variables. To examine the relationship between the variables and to test the moderation model, regression analysis was conducted. This study wants to know the role of resilience and positive religious coping as moderators in the interaction of trait anxiety in pain catastrophizing. Data processing was carried out using SPSS Statistics version 25 and the addition of the PROCESS v3.5 tool in the SPSS program for regression analysis.

RESULTS

Participant Caharacteristics

The total participants were 275, with most of them being female (76.4%), Moslem (83.6%), and having a regular job (54%). In the questionnaire, participants might report more than one area of pain, and almost half (48%) report experiencing pain in 7-10 areas. The reported areas were mostly bone, joint, or muscle; head; and lower back. Table 1 presents a more detailed list of participants' characteristics.

Within the participants, 53.1% found to be engaged in catastrophic thinking (M = 29.70, SD = 12.14), 81.5% tend to be anxious all the time (M = 52.39, SD = 13.15), and 65.8% have normal resilience (M = 3.28, SD = .66). According to the mean score, participants reported high engagement in positive religious coping (M = 24.14, SD = 4.05) and moderate negative religious coping (M = 21.73, SD = 5.29).

Preliminary Analysis

As presented in Table 2, correlation analysis showed that pain catastrophizing was positively correlated with the vulnerable factors (trait anxiety and state anxiety), meaning that a high score in anxiety related to a high score in pain catastrophizing. Pain catastrophizing was also negatively correlated with resilience and negative religious coping. The result showed that when the pain catastrophizing score was high, the resilience and negative religious coping score were low. Trait anxiety correlated with state anxiety negatively and correlated positively with resilience, positive religious coping, and negative religious coping. Resilience also correlated with positive and negative religious coping.

Table 1. Participants' Characteristics

	n	%
Gender		
Female	210	76.4
Male	65	23.6
Job		
Unemployed	12	4.4
Regular work	148	53.8
Housewife	48	17.5
Student	67	24.4
Education		
High school and below	122	44.4
Undergraduate	139	50.5
Postgraduate	14	5.1
Religion		
Islam	230	83.6
Christian	21	7.6
Catholic	12	4.4
Hindu	4	1.5
Buddha	5	1.8
Others	3	1.1
Most Reported Pain Area*		
Bone, joint, muscle	233	84.7
Head	223	81.1
Arm and hand or leg and foot	222	80.7
Lower back	217	78.9
Waist	208	75.6
Total Pain Area Reported Individually		
1 – 3	28	10.2
4 – 6	115	41.8
7 – 10	132	48.0

Primary Analysis

Primary analysis showed that the overall model were significant predictors of pain catastrophizing, $F(7,267) = 24.11$, $p < .001$, $R^2 = 0.39$. The overall model

Table 2. Descriptive Result and Correlation between Variables

Variables	M	SD	Range	1	2	3	4	5	6
Pain Catastro-phizing	29.70	12.14	0-52	1	.397**	.386**	-.559**	.031	-.241**
Trait Anxiety	52.39	13.15	22-80		1	.831**	-.404**	-.288**	-.362**
State Anxiety	50.21	14.65	20-80			1	-.355**	-.204**	-.414**
Resilience	3.28	.66	1.5-5				1	.120*	.209**
Positive Religious Coping	24.14	4.05	7-28					1	.012
Negative Religious Coping	21.73	5.29	7-28						1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

predicted as much as 39% variance of pain catastrophizing. Resilience significantly predicted pain catastrophizing, b = -7.23, $t(267)$ = -2.15, p = .033, while the other predictors did not. When examining the moderators, it was found that positive religious coping serves as a significant moderator. Pain catastrophizing was predicted by the interaction between trait anxiety and positive religious coping, b = .02, $t(267)$ = 2.00, $p < .05$. The interaction explains 5% variance in pain catastrophizing, $F(1,267)$ = 4.00, p = .046, change R^2=.05. Resilience did not function as moderator, $F(1,267)$ = .23, p = .63, change R^2= .00. The regression result is presented in Table 3. As seen in Table 4, the conditional effect analysis revealed that the effect of trait anxiety on pain catastrophizing was significant when the level of positive religious coping was high among the low, moderate, and high levels of resilience.

DISCUSSION

The hypothesis that tested in this study were 1) resilience moderates the effect of trait anxiety on pain catastrophizing; 2) positive religious coping serves as moderators in the effect of trait anxiety and pain catastrophizing. The analysis revealed that the second hypothesis was supported. Previous studies (e.g., Ferreira-Valente et al. (2022), Baetz and Bowen (2008), and Lysne and Wachholz (2010)) reported that believing in higher Being helps patients dealing with their pain and better adjustment. Büssing et al. (2009) stated that spirituality/religiosity can be considered a coping strategy for patients with chronic pain.

Several factors of spirituality/religiosity were proven to help chronic pain patients, including the openness to find meaning and involvement in religious activity, especially worship attendance (Baetz & Bowen, 2008; Lysne & Wachholtz, 2010). Lysne and Wachholz (2010) argued that connectedness with God or a higher Being might bring comfort and act as a source of love and support; therefore, individuals adapt to pain better. Shaygan & Shayegan (2019) particularly reported that spiritual well-being improves negative cognitions that come with pain experience, particularly catastrophizing. As an adaptive coping strategy (Büssing et al., 2009), religious coping can lessen anxiety level (Ano & Vasconcelles, 2005; Lucchetti et al., 2012). It is also important to note the relation between negative religious coping and distress (Ano & Vasconcelles, 2005; Harris et al., 2018; Lucchetti et al., 2012), which on the other hand, may worsen pain experience.

Table 3. Regression analysis

	b CI Lower, CI Upper	*SE*	*t*	*p*
Constant	64.54 26.81, 102,27	19.16	3.37	< .001
Trait Anxiety	-.30 -.92, .32	.32	-.95	.341
Resilience	-7.23 -13.86, -.61	3.37	-2.15	**.033**
Positive Religious Coping	-.79 -2.04, .47	.64	-1.23	.219
Trait Anxiety X Resilience	-.03 -.15, .09	.06	-.48	.632
Trait Anxiety X Positive Religious Coping	.02 .00, .04	.01	2.00	**.046**
State Anxiety	-.08 -.07, .22	.07	1.05	.296
Negative Religious Coping	-.11 -.35, .13	.12	-.93	.354

Bold values are statistically significant (p < .05)

While previous studies found the influence of resilience in pain experience (e.g., Ankawi et al. (2017), Kim et al. (2020), and Trompetter et al. (2017)), this study found no evidence of resilience as a moderator in the effect of trait anxiety on pain catastrophizing, although the result showed resilience influenced pain catastrophizing. In this mechanism, resilience might not directly influence anxiety caused by pain.

What may also be attributable to the resilience data assessed in this study, is the individual's overall level of resilience - as a result of the individual's efforts to bounce back. Meanwhile, there are several factors of resilience itself. Previous research showed that the influence of resilience in positive pain adaptation might be the result of cognitive factors and coping strategies (Alschuler et al., 2016). Another study found the mediation role of acceptance in the influence of resilience in pain adaptation (Ramírez-Maestre & Esteve, 2014), which is one of the five factors of resilience (Alschuler et al., 2016).

There are other limitations to this study. Although this study is part of a longitudinal study, this cross-sectional design may not indicate a causal relationship between the variables. Additionally, this study didn't require an official diagnosis from a physician. It is possible that participants reported a highly biased and subjective experience. It is important to note that the participants' region is undetected. Considering the vast territory of Indonesia, findings from this study must be interpreted with caution.

Table 4. Conditional Effect

	Positive Religious Coping		
	Low	Moderate	High
Resilience			
Low	.06	.16	**.23**
Moderate	.04	.14	**.21**
High	.02	.13	**.19**

CONCLUSION

This study proves the moderating role of positive religious coping in the interaction of trait anxiety and pain catastrophizing, especially in the young adult population. Positive religious coping may serve as an adaptive coping strategy while dealing with chronic pain. This result showed that positive religious coping could

be considered a potential aspect to be targeted in intervention, particularly in Indonesia where the values of religion are incorporated into the daily activities.

RECOMMENDATIONS

Based on this research, there are several recommendations and suggestions for future research and related practitioners. To better understand the role of resilience in pain adaptation, it is suggested to measure the various factors of resilience. The possibility of subjective bias in this research can be overcome by requiring a medical diagnosis by physicians. This research also highlights that chronic pain in young adults is as risky as in late adulthood. Attention needs to be put more on this population. Finally, besides medical treatment, treating chronic pain may be possible through positive religious coping.

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