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Quarter-life crisis: Personal growth initiative as a moderator of uncertainty intolerance in psychological distress

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Abstract: Quarter-life crisis is a psychosocial crisis in which individuals are vulnerable to experiencing psychological distress. One contributor to such distress is uncertainty intolerance, while personal growth initiative is a factor that can reduce it. This study examines Personal Growth Initiative (PGI) in determining the effect of uncertainty intolerance on psychological distress in individuals experiencing a quarter-life crisis. A total of 309 participants were selected through a screening process using the Quarter-life Crisis Questionnaire. The participants completed the Intolerance of Uncertainty Scale, General Health Questionnaire-12, and Personal Growth Initiative Scale. Moderation regression analysis was performed using the Hayes PROCESS Macro. The results indicate that personal growth initiative buffers the effect of uncertainty intolerance on psychological distress in individuals experiencing a quarter-life crisis ($\beta = -0.193$, $p = .003$, $R^2 = .117$), but with differences shown based on age and gender categories. Based on the findings, it is necessary to build personal growth initiative skills, which will assist individuals in achieving and maximizing their potential and adapting well when faced with conditions of uncertainty.

Keywords: intolerance of uncertainty; personal growth initiative; psychological distress; quarter-life crisis

Abstrak: Quarter-life crisis sebagai krisis psikososial individu rentan mengalami distress psikologis. Salah satu faktor krusial yang berkontribusi menyebabkan distress psikologis adalah intoleransi ketidakpastian. Sementara itu, inisiatif pertumbuhan pribadi menjadi faktor yang dapat menurunkan distress psikologis. Penelitian ini bertujuan untuk menguji peran inisiatif pertumbuhan pribadi dalam menentukan pengaruh intoleransi ketidakpastian terhadap distress psikologis pada individu yang mengalami quarter-life crisis. Sebanyak 309 partisipan terpilih melalui proses skrining menggunakan Quarter-life Crisis Questionnaire. Alat ukur yang digunakan berupa Intolerance of Uncertainty Scale, General Health Questionnaire-12, dan Personal Growth Initiative Scale-II. Analisis regresi moderasi dilakukan menggunakan PROCESS Hayes. Hasil penelitian ini menunjukkan bahwa inisiatif pertumbuhan pribadi berperan dalam memediasi pengaruh intoleransi ketidakpastian terhadap distress psikologis pada individu yang mengalami quarter-life crisis ($\beta = -0.193$, $p = 0.003$, $R^2 = 0.117$). Ditemukan juga adanya perbedaan berdasarkan kategori usia dan jenis kelamin. Berdasarkan temuan, perlu penerapan strategi untuk membangun keterampilan inisiatif pertumbuhan pribadi, agar dapat membantu individu dalam memaksimalkan potensi secara penuh, sehingga dapat menghadapi ketidakpastian.

Kata Kunci: intoleransi ketidakpastian; inisiatif pertumbuhan pribadi; distress psikologis; quarter-life crisis

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1 Quarter-life crisis: Personal growth initiative as a moderator of uncertainty intolerance in psychological distress

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Introduction

Life is full of changing conditions, and individuals must adapt to varying patterns, challenges, or new problems. Some show a positive response, are enthusiastic, and adapt well. In contrast, other individuals respond by being overwhelmed or stressed when faced with new and complex changing conditions. Those who cannot adapt well tend to experience a quarter-life crisis. Quarter-life crisis reflects an unstable condition in several aspects of their lives, including career choice, unemployment, job type mismatch, financial problems, marriage, family problems, divorce, and other aspects of life goals (Robinson, 2019; Robinson & Wright, 2013).

Based on a survey by LinkedIn Corporate Communications (2017), 75% of individuals aged 25-33 were experiencing a quarter-life crisis. That research found that this was caused by uncertainty, confusion, or frustration about their careers; adversity in achieving personal goals; pressure to get married or have children; or the inability to achieve one's desired salary. The complexity of the transition period from adolescence to adulthood is full of uncertainty, ambiguity, and unstable circumstances, and individuals can be prone to psychological distress. According to the psychological dictionary of the American Psychological Association (2018), psychological distress is a series of painful mental and physical symptoms based on self-report measures. In addition, it is an unpleasant subjective stress response, referring to negative emotional states such as anxiety (e.g., restlessness, tension, fear, worry) and depression (e.g., feelings of worthlessness, insecurity, inadequacy) (Drapeau et al., 2012; Husain et al., 2014; Matthews, 2016).

Previous studies have shown that stressful life events cause distress (Arnett et al., 2014; Arnett & Mitra, 2020; Haase et al., 2012; Rosen et al., 2014),

low self-esteem (Robinson, 2019), and feelings of inferiority and social withdrawal (Arvidsson et al., 2016). Uncertainty is associated with approaching a new stage of development, or a quarter-life crisis, characterized by increasing stress and the experience of psychological distress (Mahmoud et al., 2012).

Furthermore, individuals in a state of crisis and psychological distress will, in the long term, be hindered in implementing their full potential and burden the achievement of the meaning of life, leading to poor psychological well-being. Research on psychological distress has been widely conducted in Indonesia. Kaligis et al. (Kaligis et al., 2021) found that at the transitional age (16-24 years old), 95.4% of individuals experienced anxiety and 88% experienced depression. The Ministry of Health of the Republic of Indonesia (2018) also supports this, which states that individuals over 15 years old experience emotional disorders and depression.

Individuals who experience a quarter-life crisis face the possibility of cognitive bias in perceiving the future, as this is related to the present and future orientation of individuals' perceptions, beliefs, and expectations. Cognitive bias or impaired attention is characterized by feelings of inadequacy in controlling threats or negative impacts that could occur in the future. These feelings can cause psychological distress in individuals' tolerance levels when they are faced with uncertain conditions. Intolerance of uncertainty refers to the trait defined as an individual's inability to deal with a threat response triggered by uncertainty (Carleton, 2016). Several studies have also found that intolerance of uncertainty is a risk factor for individuals experiencing a quarter-life crisis (Yeler et al., 2021) and is associated with symptoms of psychological distress (Carleton, 2012, 2016; Chen et al., 2018; Rosen et al., 2014).

Contemplating an event as negative can cause individuals to experience negative emotions (Matthews, 2016). An event perceived as a threat or uncertainty can be related to anxiety (Matthews, 2016; Matthews et al., 2013). A meta-analysis study conducted by Barry et al. (2020) showed that the effects of psychological distress affect aspects of health and can impair cognitive functions (Hersi et al., 2017; Matt et al., 2017; Tran et al., 2017), reducing individual well-being (Anser et al., 2021).

This study aims to identify the risk factors that can be predictors of psychological distress and identify potential factors that could prevent the emergence of psychological distress. Several studies provide an alternative to individuals' positive disposition to prevent psychological distress. Related conditions tend to be low in individuals with a positive mindset (Ayub & Iqbal, 2012; Schroder et al., 2017; Weigold et al., 2020). For people suffering a quarter-life crisis, the transition (adolescent to adulthood) is stressful, making them vulnerable to experiencing psychological distress. Therefore, a personal aspect is needed to reduce psychological distress. One of the concepts related to psychological distress in personal development is personal growth initiative.

According to Robitschek (1998), such initiative is conceptualized as an individual's tendency to play an active and conscious role in changes in personal development and consists of cognitive and behavioral components. Personal growth initiative is proactive behavior in personal change and development (Robitschek et al., 2012). As a concept related to the intention to change and to self-development, the initiative consists of four aspects: a) readiness to change and the ability to explore various fields and opportunities for growth; b) planfulness and implementing strategies to develop; c) the ability to use resources personally (e.g., optimism, self-

efficacy, self-control) and materially (e.g., social support, education, mentoring) to assist in the process of personal development; and d) intentional behavior, the ability to realize the process of personal development (Robitschek, 1998; Robitschek et al., 2012, 2019).

A meta-analysis study by Weigold et al. (2020) found that personal growth initiative is significantly associated with distress, such as symptoms of depression, anxiety, negative emotions, and functional disorders. Several studies have found that such initiatives can prevent the emergence of psychological distress, reduce the intensity of its occurrence, or help recovery from psychological distress (Borowa et al., 2020; Danitz, 2017). A high level of personal growth initiative allows better recognition and determination of the sources of problems and the development of strategies or plans to combat distress conditions (Ayub & Iqbal, 2012).

Based on previous research, this study posits that personal growth initiative reduces psychological distress levels in individuals with an intolerance of uncertainty. When individuals face conditions of uncertainty, such as a quarter-life crisis, their level of psychological distress will tend to be low if they possess high personal growth initiative. It can be the case because individuals can prevent symptoms of psychological distress through cognitive mechanisms as a component of personal growth initiative (Robitschek et al., 2012). They can also manage the uncertainty of situations, such as by making plans, being aware of the readiness to change, being able to implement effective it, and being able to identify internal and external potentials that are needed to adapt to the situation (de Freitas et al., 2016; Robitschek, 1998). Conversely, when individuals have low personal growth initiative, they tend to have difficulty adapting to psychological distress conditions when faced with uncertainty.

Several previous research has shown that personal growth initiative is a moderating variable. A study states that personal growth initiative plays a significant role in the recovery process for individuals with psychopathology (Robitschek et al., 2019). Personal growth initiative moderates the relationship between stress and psychological adjustment (Yakunina et al., 2013). These findings consistently show that psychological factors can inhibit the impact of this form of psychological distress and support our study in exploring personal growth initiative as a moderating variable. A limited number of studies examine the intolerance of uncertainty and personal growth initiative; it has been found that intolerance of uncertainty weakens personal growth initiative (Yuniardi et al., 2023). Therefore, the study aims to test personal growth initiative as a moderator.

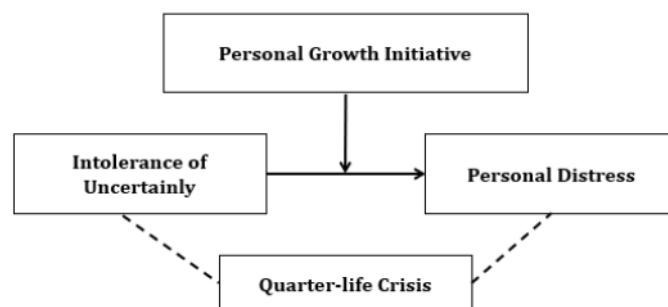
The research model is presented in Figure 1. Quarter-life crisis is when individuals experience a period of life transition full of uncertain situations and conditions, especially in the realm of careers, education, and/or relationships. Individuals who experience a quarter-life crisis in

the medium and high categories tend to experience a high level of intolerance of uncertainty, which increase will also follow in psychological distress. In addition, personal growth initiatives such as personality traits or individual potential are considered to play a role in determining the effect of intolerance of uncertainty on psychological distress.

The study investigates the role of personal growth initiative as a determinant of the effect of uncertainty intolerance on psychological distress. The analysis is conducted by separating the participants based on demographic data categories (gender, age, education level, employment status, and marital status), which has not been the case in previous research. In addition, because previous studies have mostly used clinical populations, this research considers explicitly non-clinical participants, namely individuals experiencing a quarter-life crisis.

The research hypothesis is that personal growth initiative plays a role in restraining the influence of uncertainty intolerance on psychological distress in individuals experiencing a quarter-life crisis.

Figure 1
Research Model



Methods

Design

The research adopts a non-experimental quantitative design. It uses the moderation regression method to examine the role of personal growth initiative in moderating the effect of intolerance of uncertainty on psychological distress in individuals experiencing a quarter-life crisis.

Participants

The selection criteria were individuals experiencing a quarter-life crisis aged 18-35. These 368 participants were recruited through an online survey using non-random sampling, of whom 309 ($M=23.68$, $SD=2.65$) met the criteria. Based on their demographic data (Table 1), the participants consisted of 84 men (27.3%) and 225

women (72.7%). 241 (78.2%) were educated to university level, 125 (40.6%) were employed, and 273 (88.6%) were unmarried.

Instruments

The Quarter-life Crisis Questionnaire was used to select subjects experiencing a quarter-life crisis. This screening instrument was modified to adjust to Indonesian culture based on measuring tools developed by Agustin (2012) and Petrov et al. (2022).

The questionnaire consists of 12 items on a dichotomous scale ('Yes' or 'No'). Individuals with more than six 'Yes' answers were categorized as experiencing a quarter-life crisis and were thus suitable for further analysis. The reliability of the questionnaire in this study was ($\alpha = .824$).

Table 1

Participant Demographics

Category	Total (N=309) N (%)	Men (N=84) N (%)	Women (N=224) N (%)
Age M (SD)	23.68 (2.65)	23.87 (2.71)	23.61 (2.63)
18-21	61 (19.8%)	15 (17.9 %)	46 (20.5 %)
22-35	247 (80.2 %)	69 (82.1 %)	178 (79.5 %)
Education			
High School	37 (12 %)	16 (19 %)	22 (9.8 %)
Diploma	29 (9.4 %)	10 (11.9 %)	17 (7.6 %)
University	241 (79 %)	57 (67.9 %)	184 (82.1 %)
Others	2 (1.6 %)	1 (1.2 %)	1 (0.4 %)
Employment Status			
Worker	125 (40.5 %)	37 (44 %)	88 (39.3 %)
Student	105 (34 %)	27 (32.1 %)	78 (34.8 %)
Worker & Student	33 (10.7 %)	11 (13.1 %)	21 (9.4 %)
Unemployed	46 (14.9 %)	9 (10.7 %)	37 (16.5 %)
Marital Status			
Unmarried	274 (88.7 %)	77 (91.7 %)	196 (87.5 %)
Married	35 (11.3 %)	7 (8.3 %)	28 (12.5 %)

The 12-item General Health Questionnaire (GHQ-12) measures general psychological distress over the preceding few weeks (Goldberg & Williams, 1988). It consists of a 12-item unidimensional scale in the form of a bimodal scale (0-0-1-1) and, in this research, had a reliability of ($\alpha = .859$) which is modified from the original version from Goldberg and Williams (1988). Exploratory Factor Analysis (EFA) resulted in one factor with a total variance of 48.61%. A model fit test from the Confirmatory Factor Analysis (CFA) was conducted to evaluate the model using the goodness-of-fit method. The RMSEA value was 0.079, below 0.08, so the model met the suitability criterion (Hair et al., 2010). The GFI and CFI values were above 0.90, with a CFI value of 0.93, indicating the model's suitability for interpretation (Hair et al., 2010). Factor loading ranged from 0.58 to 0.73. Based on the results of the analysis, the GHQ-12 instruments were deemed to be good or adequate. Other research in Indonesia which is proven to have good reliability values is research by Primasari and Hidayat (2016), with GHQ-12 ($N = 243$) using the same scoring method, with Cronbach's alpha ($\alpha = .863$). It is supported by research by Rahmandani et al. (2021), with GHQ-12 ($N = 552$) and Cronbach's alpha ($\alpha = .836$). These studies provide evidence that the GHQ-12 is a measurement tool that can be used in the Indonesian context.

The Intolerance of Uncertainty Scale (IUS-12) is a 12-item self-report measure of individual responses in ambiguous situations, uncertain situations, and future events. The version of IUS-12 used was modified from Istiqomah et al. (2022) itself an adaptation from Carleton et al. (2007), with a reliability of ($\alpha = .883$). IUS in this unidimensional is a Likert scale with four alternative responses, from 1 (does not describe my character) to 4 (describes my character very well).

The Personal Growth Initiative Scale-II (PGIS-II) measures individual personal growth initiatives. In this study, the Indonesian version of the PGI-16 measuring instrument was employed, as developed by Saraswati and Amalia (2022), and adapted from Robitschek et al. (Robitschek et al., 2012), with reliability ($\alpha = .906$). The unidimensional model PGIS-II was used, which consists of cognitive and behavioral aspects. Cognitive ones comprise readiness to change and planning, while the behavioral aspects consist of resources and intentional behavior. PGIS-II is a Likert scale with four alternative responses, from 1 (most inaccurate) to 4 (most accurate).

Research Procedure

The participants were first asked to complete an informed consent form and to provide their demographic data, including gender, age, employment status, and marital status. After doing this, they were asked to complete a screening form, which determined whether their data would be further analyzed or eliminated. They then completed a questionnaire related to the research variables, followed by a debrief form. The participants were compensated with opportunities to obtain e-money for five selected respondents and counseling services with psychologists for one selected participant.

Analysis Procedure

Moderated regression analysis using the Hayes PROCESS Macro (2018) was employed to examine the research hypothesis (Hayes, 2018). This macro method analyzes diverse moderation models and is indicated for analyzing ones with moderation based on regression. This study also conducted follow-up tests to strengthen the argument. The follow-up test was performed with a moderation regression that separated the participant categories based on gender, age, education level, employment status, and marital status.

Results

The regression moderation analysis (Table 2) showed that personal growth initiative significantly determined the effect of uncertainty intolerance on psychological distress ($B=-0.193$, $SE=0.064$, $p=.003$). The negative coefficient indicates that such initiative reduces the influence of uncertainty intolerance on psychological distress. Based on the moderated regression analysis, this model predicts the effect with an effective contribution of 11.7% ($R = .342$, $R^2 = .117$, $p<.001$).

The interaction between psychological distress, intolerance of uncertainty, and personal

growth initiative is mapped in the graph shown in Figure 2. Individuals with a low level of personal growth initiatives can not reduce the impact of uncertainty intolerance on psychological distress. However, personal growth initiatives in the high and medium categories can reduce the impact. Based on the graph, it can be concluded that personal growth initiatives can play a role in moderating the influence of uncertainty intolerance on the psychological distress of individuals experiencing a quarter-life crisis.

For additional analysis, a different test (Table 3) was conducted to determine the participants' descriptions concerning the differences in each research variable based on gender and age.

Table 2

Regression Moderation Test

Test Model	GHQ		
	<i>B</i>	<i>SE</i>	<i>p</i>
IU	0.509	0.199	.011
PGI	0.539	0.141	.000
IUS X PGI	-0.193	0.064	.003

Notes. IU=Intolerance of Uncertainty; PGI=Personal Growth Initiative; GHQ=General Health Questionnaire

Table 3

Independent Sample t-test

Category	Total (N=309) M (SD)	Gender		Age	
		<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Intolerance of Uncertainty	2.31 (0.59)	-0.465	.642	-0.672	.503
Prospective anxiety	0.75 (0.26)	1.438	.152	-1.968	.050*
Inhibitory anxiety	0.69 (0.34)	1.014	.312	-1.647	.103
Personal Growth Initiative	3.01 (0.42)	1.518	.131	-0.378	.706
Planfulness	2.98 (0.48)	-1.643	.101	-0.141	.888
Readiness for change	2.98 (0.52)	-1.714	.089	-0.739	.462
Intentional behavior	3.18 (0.47)	-1.543	.125	-0.012	.990
Use of resources	2.86 (0.60)	0.026	.980	-0.372	.711
Psychological Distress	0.73 (0.27)	1.362	.175	-2.013	.045*

* $p < .05$

Figure 2
Graph of the Regression Moderation Model

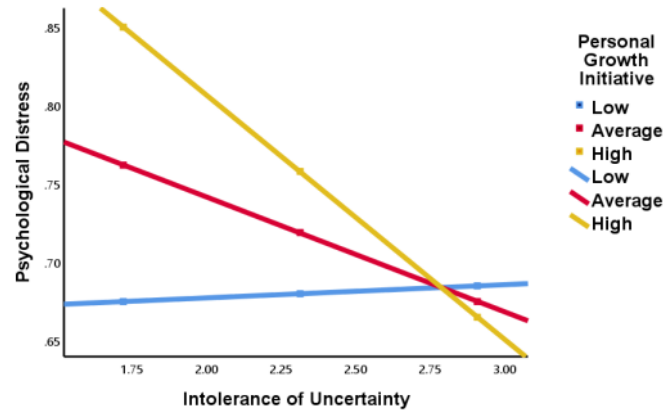


Table 5
Moderation Regression Test by Gender Category

Test Model	Men (N=84)			Women (N=224)		
	GHQ					
	B	SE	p	B	SE	p
IU	0.466	0.315	.143	0.529	0.268	.050
PGI	0.480	0.225	.036	0.573	0.189	.003
IUS X PGI	-0.179	0.107	.098	-0.199	0.085	.020

IU = Intolerance of Uncertainty; PGI = Personal Growth Initiative; GHQ = General Health Questionnaire

The analysis showed that there was no difference between men and women in the level of uncertainty intolerance ($t = -0.465$, $p = .642$), psychological distress ($t = -1.362$, $p = .175$), or personal growth initiative ($t = -1.518$, $p = .131$).

Analysis of the independent sample t-tests based on the age categories of 18-21 and 22-35 did reveal differences. In the 22-35 age category, the level of psychological distress is higher than for those aged 18-21 ($t = -2.013$, $p = .045$). Regarding intolerance of uncertainty, which consists of aspects of prospective anxiety and inhibitory anxiety, it is shown that there are

significant differences concerning the age category only in terms of prospective anxiety. People aged 22-35 are also shown to have higher prospective anxiety than those aged 18-21 ($t = -1.968$, $p = .050$). On the other hand, no significant differences were demonstrated related to the aspect of inhibitory anxiety. In addition, the independent sample t-test for personal growth initiatives consists of planfulness, readiness to change, and intentional behavior aspects. The use of resources showed no significant difference in terms of gender or age.

Regression test moderation was also conducted by categorizing the participants based on age (Table 4) and gender (Table 5). Based on the age category, the results of the interaction moderation model show significant results in the 22-35 age group ($B = -0.199$, $SE = 0.069$, $p = .004$) but insignificant ones for those aged 18-21 ($B = -0.080$, $SE = 0.260$, $p = .759$). Concerning gender, the moderating regression results were only significant for the female participants ($B = -0.265$, $SE = 0.171$, $p = .128$), not the males ($B = -0.179$, $SE = 0.107$, $p = .098$).

The results of the moderation regression analysis demonstrated significant differences in the gender category but not in that age. Furthermore, similar analysis results were also obtained in the regression moderation analysis, which separated the categories of education level, employment status, and marital status. There were no significant differences in these categories.

Discussion

Quarter-life crisis is associated with stressful conditions and is natural for individuals transitioning from adolescence to adulthood. The condition demands that individuals be able to improve themselves. Nonetheless, those who experience such a crisis are vulnerable to psychological distress, as they are faced with demands, challenges, and targets that need to be faced by each of them. This situation is a source of stress. Dealing with uncertain circumstances can lead to individuals developing psychological distress, depending on their intolerance to uncertainty. It follows the results of this study, which show a positive influence of intolerance to uncertainty on psychological distress. The results support similar studies which have suggested that intolerance of uncertainty contributes to anxiety, depression and other mental health problems (Carleton, 2012; McEvoy et al., 2019). The characteristics of individuals who experience

psychological distress in a quarter-life crisis include future anxiety, difficulties in making decisions, and confusion over the direction of their life (Petrov et al., 2022). Such negative emotions arise because individuals face uncertain circumstances related to the future. They will be more intolerant when facing uncertain conditions because several aspects of life (such as careers and life goals) have long-term impacts throughout life. Intolerance of uncertainty can arise because people feel they cannot control every aspect that impacts their destiny, perceiving the future as a threat because of adverse events.

Although intolerance of uncertainty affects psychological distress, the influence is determined by the role of a personal growth initiative. The moderated regression analysis conducted in this study supports this hypothesis. Personal growth initiative can buffer or reduce psychological distress influenced by an intolerant tendency to uncertainty, with a prediction level of 11.7 percent. The findings are in accordance with previous research (Ayub & Iqbal, 2012; Weigold et al., 2020; Yakunina et al., 2013). Moreover, in line with Schroder et al. (2017), personal growth initiative supported by a growth mindset can prevent or reduce the effects of stressful life events. Individuals with a growth mindset will be more proactive about essential aspects of personal growth, such as building motivation, exploring, and self-evaluation in achieving their desired life goals.

In line with research by Robitschek et al. (2012), personal growth initiatives can prevent symptoms of psychological distress due to uncertainty intolerance through cognitive and behavioral mechanisms. Characteristics of people with personal growth initiative include: 1) awareness of and intentions toward personal goals; 2) adaptable problem-solving skills; 3) confidence in overcoming obstacles; high self-acceptance; 4) readiness to change; stronger

intentions or motivations to act; and 5) ability to make effective use of resources or facilities (Robinson, 2019; Robitschek, 1998; Robitschek et al., 2012).

In this regard, it can be seen that the intensity of proactive behavior in achieving personal goals can be a determining factor when facing a quarter-life crisis, so individuals will focus more on developing themselves when faced with uncertainty. The level of psychological distress will decrease if individuals focus on positive aspects related to personal change and growth when facing a quarter-life crisis.

Individuals with personal growth initiative believe in their abilities. Research by de Castella et al. (2013) found that those who have confidence in their abilities to control their emotions when experiencing psychological distress could reduce distress and increase psychological well-being. Furthermore, Berking et al. (2012) explain that individuals with self-confidence can regulate their emotions and will focus more on their skills or abilities in regulating their emotions and coping. For example, they can identify, interpret and understand triggers and are willing to deal with the distress that arises from difficult situations (de Castella et al., 2013). In the case of a quarter-life crisis, which is full of uncertainty, individuals with a growth mindset will focus on self-evaluation; identifying internal aspects that need to be developed; identifying obstacles; and developing appropriate plans and strategies to face quarter-life crisis. Therefore, instead of experiencing difficulty adapting to a quarter-life crisis, such individuals will be more focused on developing positive aspects within themselves.

This study also found that based on gender, the moderation regression analysis was only significant in early adulthood (22-35 years), not in the 18-21-year-old group. Mostly, the age groups are similar to the findings of Arnett et al. (2014)

related to individuals experiencing life transitions or transition into adulthood, with all the associated challenges and responsibilities. Those 22-35 years old are more at risk of being stressed due to a quarter-life crisis than their younger counterparts. The high level of competition is also one of the individual factors in the risk of psychological distress during a quarter-life crisis. As supported by the Indonesia Central Bureau of Statistics (2023), 20-24-year-olds occupy the first position in terms of unemployment, followed by the 25-29-year-old group. This situation is related to future uncertainty. Individuals with a high level of uncertainty intolerance tend to experience psychological distress. However, with personal growth initiative skills, they will behave more proactively in facing challenges. Therefore, despite being faced with uncertainty and various challenges, the level of risk of psychological distress can decrease.

De Jager-van Straaten et al. (2016) found age-based differences regarding personal growth initiative. Older people show higher intention and motivation, are actively involved in the change process, and are more likely to set goals in life. These results align with Robitschek et al.'s research (2012), in that personal growth initiative requires goal setting, planning, and a strong desire to act to achieve goals. In addition, individuals begin to experience being involved in broader life responsibilities in adulthood. Therefore, adults have more direction in determining their life goals than younger people (18-21 years old), who are still actively involved in completing their studies. Setting and achieving goals is not a priority at a young age (de Jager-van Straaten et al., 2016).

Based on gender, the moderated regression analysis was only significant for female participants. It is in line with Robinson (2015), who found that quarter-life crises were more

common in women than men as they are more prone to experiencing psychological distress than men. From the perspective of the quarter-life crisis, women are sometimes more vulnerable to social conflict, in which women meet the demands of social construction than men. For example, some women want to focus on pursuing a career but also need to consider many other roles, such as marriage and family. Herawati and Hidayat (2020) state that women experience indecision in choosing between marriage and having a family or pursuing a career up to 30 due to demands from their environment. Therefore, faced with this conflict, the role of high personal growth initiative is significant in reducing symptoms of distress.

Gender-based differences in personal growth initiatives are also related to problem-solving abilities. Research by Robitschek et al. (2012) found that men are more dominant or have a higher level of belief that a problem is a challenge, are more optimistic, and believe in their abilities to solve the problem. However, considering that the majority of participants in this study were female, further research is needed to confirm its results.

Although this study succeeded in finding significant differences between males and females, there were no significant differences related to other demographic types, such as age, education, employment status, and marital status. It can be assumed that education level, employment status, and marital status have their characteristics in the case of a quarter-life crisis. Research by Arnett and Mitra (2020) and Yeler et al. (2021) shows aspects of quarter-life crisis that vary across age ranges, educational levels, and marital status. The psychological distress is due to the intolerance of uncertainty, which varies across different demographics. Other research has found a relationship between education level, employment status, and quarter-life crises. Still,

the findings need to be re-examined to confirm them, particularly research that focuses on differences in personal growth initiative in age, level of education, employment, and marital status.

The inability of individuals to adapt during the transition to becoming adults is also a cause of the quarter-life crisis. It can occur because of a lack of preparation in facing challenges during the quarter-life crisis. Therefore, improving, instilling, and developing skills related to personal growth initiatives should reduce psychological distress. Through personal growth initiatives, individuals will focus on opportunities to change and develop based on their experience (Robitschek et al., 2012).

The intensity of proactive behavior to achieve self-growth plays a significant role in helping individuals through the quarter-life crisis. They now face novelty, complexity, uncertainty, and stressful conditions. They need to make various life choices and devote more consideration to their interests, abilities and preferences, and life goals. It all contributes to individuals experiencing confusion; fear when making decisions; anxiety, depression, and internal conflicts. In addition, personal growth initiative plays a role in helping individuals reduce psychological distress. However, psychological distress can have positive traits for individuals (Petrov et al., 2022). Supported by previous research has demonstrated that negative emotions as part of the negative aspect of intolerance uncertainty are essential for re-evaluating aspects of oneself; exploring one's goals; and determining the appropriate direction for achieving them (Robinson, 2020). Therefore, if an individual is facing uncertainty but supported by improvement in personal growth initiative skills, it becomes essential for individuals going through a quarter-life crisis. Individuals have the capacity in the form of personal growth initiatives within

themselves that have the potential to help them escape from negative emotions or psychological distress.

The results of the study have practical implications for various parties. They can provide insights to help individuals cope with a quarter-life crisis, which is especially important in developing personal growth initiative skills. For professionals engaged in mental health, such as psychologists or counselors, the research could be used to help individuals overcome psychological distress. The research findings could also be a reference for implementing appropriate strategies to achieve and fulfill individuals' potential or positive characteristics to achieve psychological well-being. In education, the research could be a foundation for developing strategic programs to prepare individuals for a quarter-life crisis; for example, instilling self-growth initiative skills by integrating them into learning models.

A strength of this study is that it demonstrates the differences in the role of moderation between males and females, which has not been proven in previous studies. However, besides its strengths,

the research does also have limitations. First, it was conducted using a self-report, thus opening up the possibility of the emergence of bias in the data entry. Second, analysis was not conducted by describing each dimension of the research variables in more detail, especially those of uncertainty tolerance and personal growth initiative. Third, the study did not consider other factors influencing personal growth initiative or the reduction of psychological distress, such as social support or religiosity.

Conclusion

The study has demonstrated that personal growth initiative determines the effect of uncertainty intolerance on psychological distress in individuals experiencing a quarter-life crisis. As a form of prevention mechanism of the impact of uncertainty intolerance on psychological distress, personal growth initiative is a process that needs to be developed by individuals to achieve their goals. Those who experience such a crisis need to build skills in self-growth initiatives to adapt effectively to uncertain conditions, especially those related to future careers or other life goals.[]

Author Contribution Statement

Audita Izza Balqis: Conceptualization; Data Curation; Formal Analysis; Investigation; Methodology; Project Administration; Resources; Validation; Visualization; Writing Original Draft; Writing, Review & Editing. **Diah Karmiyati:** Conceptualization; Data Curation; Formal Analysis; Funding Acquisition; Investigation; Methodology; Project Administration; Resources; Validation; Writing, Review & Editing. **Cahyaning Suryaningrum:** Conceptualization; Data Curation; Formal Analysis; Investigation; Methodology; Project Administration; Resources. **Hanif Akhtar:** Conceptualization; Methodology; Validation.

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