Biopsikososial **ISSN 2599 - 0470**
Vol. 8 No. 2 Oktober 2024

Intolerance of Uncertainty Predicts Happiness of Young Adults in Post Covid-19 Pandemic

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Abstract. There is evidence that intolerance of uncertainty (IU) is associated with difficulty experiencing positive emotions such as happiness. There is a scarcity of research examining the relations between IU and Happiness during and after the covid-19 pandemic. We examined the degree to which IU predicts Happiness of young adults. This research was conducted using data from 555 participants, age 18 to 35 (SD = 3.34, M = 22.96). Data collected using the online questionnaire used will be created using items derived from two measuring instruments or scales that have been adapted by translating the scale items from English into Indonesian. IU was measured using 12 items the Intolerance for Uncertainty Scale (2 dimensions) from Shihata, McEvoy, and Mullan. The Oxford Happiness Questionnaire (5 dimensions, 29 items) was used to measure happiness. As predicted, IU corelates and predicted happiness. The correlation test between dimensions shows that overall happiness has significant positive correlation with both dimension of IU. On the other hand, the total IU score did not correlate significantly with the life satisfaction dimension of happiness.

Keywords: *Intolerance for Uncertainty, Happiness, Young Adult.*

Introduction

During pandemic CoVid-19 from the year 2020 to 2024, in the whole world, the government's most common action to prevent the spread of the infection is mobility restriction. Following the first 2 cases on March 2, 2020, massive infections up to more than 20 million in Indonesia and over one million worldwide confirmed cases, CoVid-19 has been noted as a pandemic. Almost all the governments in the world issued social distancing to control the fast spreading of viruses. This forced institutions and businesses to implement work from home and alternate working arrangements. These restrictions lasted throughout the pandemic and were gradually lifted until the pandemic was declared over on June 18, 2023 (Detikcom, 2024, March 2).

Numerous people around the world have experienced an extend of impacts, from financial to signs of mental clutters (Cullen, Gulati, & Kelly, 2020). Since humans are social creatures, massive mobility restrictions for a long time will also add various negative

effects. COVID-19 pandemic was not only brought negative impacts to our bodies, but also seriously influenced quality of life (Imaroh & Cashin, 2021; Tumanggor, Imaroh, & Cashin, 2021; Novita & Andriani, 2022). Prior studies have confirmed that COVID-19 pandemic has significantly increased anxiety level (Huang, Lei, Xu, Liu, & Yu, 2020; Huang & Zhao, 2020). A study in China shows from 7,236 participants, 20.1% reported depressive symptoms and 18.2% participants reported experienced poor sleep quality (Huang & Zhao, 2021). Another study reported among 17,865 active users of a social media platform in China people showed higher negative emotions (e.g., fear, anxiety) and lower positive emotions (e.g. happiness, life satisfaction) (Li, Wang, Xue, Zhao, & Zhu, 2020; Yang & Ma, 2020).

This research was conducted in connection with the fact that during the Covid-19 pandemic, a lot of research was conducted related to emotions, but most of it did not focus on discussing happiness (Mazuyumi, 2023). Some of the research such as 'daily emotional well-being during the COVID-19 pandemic (Lades, Laffan, Daly, & Delaney, 2020), 'Emotional and behavioral impact of the COVID-19 epidemic in adolescents' (Bera, Souchon, Ladsous, Colin, & Lopez-Castroman, 2022), 'emotion regulation, sleep and depression during CoVid-19 pandemic' (Niu, & Snyder, 2023). Another reason is known that Happiness levels often fluctuate from one day to the next, and an exogenous shock such as CoVid-19 pandemic can likely disrupt pre-existing happiness dynamics (Rossouw, Greyling, & Adhikari, 2021). Therefore, we need to conduct new research to determine the factors that can contribute to the increasing or decreasing happiness levels.

One of the main factors that causes emotional fluctuations, especially happiness during a pandemic, is changes in situations and extreme conditions. Most people living today have never experienced a pandemic before CoVid-19 occurred. They face new and unknown situations, which can change rapidly at any time. The rapid speed of the spread of the CoVid-19 virus has caused everyone in the world, including in Indonesia, to fear becoming victims of violence. From March 2020 until the lifting of the Covid-19 pandemic status in Indonesia on June 20, 2023, the number of positive cases of Covid-19 sufferers was recorded at 6,811,330, of which 6,640,002 recovered and 161,848 died (Liputan6.com, 2023 June 20)

On the other side governments' efforts to limit the transmission of CoVid-19 by using mobility restrictions have resulted in many employers being forced to lay off their employees. The results of a survey conducted by the Indonesian Ministry of Manpower (Kementrian Tenaga Kerja Indonesia) in November 2021 in 34 provinces recorded those 72,983 employees had become victims of Termination of Employment due to the Covid-19 pandemic. Some business owners even had to experience business bankruptcy due to the CoVid-19 pandemic (Liputan6.com, 2021 December 14).

The lack of information that occurred during the pandemic has led to anxiety and fear of uncertainty. Restrictions on mobility and interaction with other people cannot be easily accepted by most people. This condition in psychology is called intolerance of uncertainty (IU). IU refers to an individual's dispositional inability to tolerate negative responses triggered by the absence of information and sustained by the associated perception of uncertainty (Carleton, 2016). IU is associated with emotional distress and anxiety and difficulty tolerating uncertainty may contribute to maladaptive cognitions (e.g., worry) and behaviours (e.g., avoidance) which are evident in emotional disorders (Boswell, Thompson-Hollands, Farchione, & Barlow, 2013; Carleton, 2016).

Previous research, such as that conducted by Yildiz and Eldeleklioglu (2021), found that IU has a significant relationship with happiness, however, the relationship model between these two variables still needs to be studied further. As stated by Morris and his research colleagues IU was considered involved in evoking a modulating a wide array of emotional phenomena. In previous research, they concluded that uncertainty in general under ambiguity is more likely to evoke negative emotional states and less likely to evoke positive emotional states. Uncertainty under risk is less likely to evoke positive emotional states, and uncertainty heightens existing negative emotional states and dampens existing positive emotional states (Morriss, Goh, Hirsch, & Dodd, 2023).

Based on the explanation above, this research was conducted to prove whether it is true that IU has a significant effect on happiness levels, especially in post-pandemic conditions. This research was also carried out to examine the degree to which IU predicts Happiness. We targeted productive age group (18 to 40) to be the participants of this research, since this age group is indicated to be most strongly affected by the CoVid-19 pandemic (Friska, 2023).

Method

Participants and procedure

This study was conducted using quantitative non-experimental design, targeting adults from 18 to 40 years old, living in Jakarta, Bogor, Depok, Tangerang, Tangerang Selatan, Bekasi area. This study aims to examine the degree to which IU predicts Happiness of young adults after CoVid-19 pandemic. The data were collected from 555 participants, 203 male and 352 female, with an average age of 22.96 (SD = 3.39), using accidental sampling technique.

Measurements

This research used two scales with translated items (from English to Bahasa Indonesia). Both of scales have been tested using the content validity of Aiken v, assessed by three experts in related fields, resulting the score of Aiken's V coefficient (V) above 1.00. If these results are compared with the Aiken's V content validity coefficient table, it can be interpreted that both scales have good content validity. All items used in the research have corrected item-total correlation values above 0.2, referring to Clark and Watson (1995) recommended acceptable items of measurement with mean inter item correlation above 0.15.

In this research, Intolerance of Uncertainty (IU) defined as an individual's dispositional inability to tolerate negative responses triggered by the absence of information and sustained by the associated perception of uncertainty (Carleton, 2016). 12 items of Intolerance of Uncertainty Scale Short Form IUS-12 (Carleton, Northon & Asmundson, 2007) was used to measure negative beliefs about and reactions to uncertainty. This scale has two dimensions (Shihata, McEvoy & Mullan, 2018), 5 items inhibitory IU (e.g., "When it's time to act, uncertainty paralyses me") and 7 items prospective IU (e.g., "I can't stand being taken by surprise"). Items were scored on 5-point scale (1 = not at all characteristics of me; 5 = entirely characteristic of me). In the present research, the reliability α Cronbach of this scale was 0.89.

In this research, happiness is defined as people's assessment of their lives, which include affective assessment of moods and emotions as well as cognitive judgments of satisfaction (Yudiarso, Nugroho & Mustika, 2024). To measures happiness, this research

used 29 items Oxford Happiness Questionnaire developed by Hils and Argyle (2002), with a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scales have 6 dimensions (Kenzo, Yudiarso, Nugroho & Mustika, 2024): Positive Mindset (5 items, e.g., "I feel fully mentally alert"); Joy (4 items, e.g., "I find beauty in some things"); Life Satisfaction (8 items, e.g., "Life is good"); Confidence (3 items, e.g. "I rarely wake up feeling rested" (-)); Self Esteem (4 items, e.g., "I don't think I look attractive" (-)); and Social Interest (4 items, e.g., "I am intensely interested in other people"). In this samples, the reliability α Cronbach of this scale was 0.77.

Result

Measuring UI using Intolerance to Uncertainty scale resulting Mean = 42.21, SD = 10.59 with range of score from 13 to 60. From the participants' scores, we made 3 categorizations: low IU (n = 134, 24.1%), average IU (n =229, 41.3%) and high IU (n = 192, 34.6%). From the score resulting of the happiness measurement, we found Mean = 97.31, SD = 13.95 with range of score from 52 to 136. The scores could be groups within 3 categorizations: not happy (n = 111, 20%), not particularly happy or unhappy (n =372, 67%) and happy (n = 72, 13%).

Pearson Product Moment Correlation was carried out to test whether there was a significant relationship between IU and happiness and to show the relationship between IU dimensions and happiness dimensions with the results shown in Table 1 below.

Table 1.
Correlations

Measure	1	2	3
1. Total IU	-		
2. IU Prospective	0.96**	-	
3. IU Inhibitory	0.94**	0.81**	-
4. Total Happiness	0.14**	0.17**	0.10*
5. Positive Mindset	0.27**	0.26**	0.24**
6. Joy	0.27**	0.26**	0.25**
7. Life Satisfaction	0.04	0.08	-0.01
8. Confidence	-0.19**	-0.18**	-0.19**
9. Self Esteem	-0.19**	-0.16**	-0.21**
10.Social Interest	0.31**	0.31**	0.27**

Note. IU = intolerance of uncertainty
*$p < 0.05$
**$p < 0.01$

The results of the Pearson correlation test show that the total score IU, prospective IU and inhibitory IU have a significant correlation with the total happiness score and the happiness dimensions except life satisfaction dimension. Total score IU, prospective IU and inhibitory IU significantly shows a positive correlation with the total happiness, positive mindset, joy and social interest scores, but shows a negative correlation with confidence and self-esteem.

Table 2.
Linear Regression

Linear Regression	Linearity Sig.	R^2	F	β	t
Total IU – Total Happiness	0.001	0.02	11.71**	0.14	3.42**
IU Prospective – Happiness Positive Mindset	< 0.001	0.07	39.94**	0.26	6.32**
IU Prospective – Happiness Joy	< 0.001	0.07	39.73**	0.26	6.30**
IU Prospective – Happiness Confidence	< 0.001	0.03	17.46**	-0.17	-4.18**
IU Prospective – Happiness Self Esteem	< 0.001	0.03	14.45**	-0.16	-3.81**
IU Prospective – Happiness Social Interaction	< 0.001	0.09	58.35**	0.31	7.64**
IU Inhibitory – Happiness Positive Mindset	< 0.001	0.06	34.95**	0.24	5.19**
IU Inhibitory – Happiness Joy	< 0.001	0.06	37.18**	0.25	6.10**
IU Inhibitory – Happiness Confidence	< 0.001	0.04	20.99**	-0.19	-4.58**
IU Inhibitory – Happiness Self Esteem	< 0.001	0.05	25.97**	-0,21	-5.10**
IU Inhibitory – Happiness Social Interaction	< 0.001	0.08	45.00**	0.27	6.71**

Note. IU = intolerance of uncertainty
*$p < 0.05$
**$p < 0.01$

To show how much the total score IU, prospective IU and inhibitory IU can predict the total happiness score and its dimensions, a linear regression test was carried out as shown in Table 2. In the linear regression test, the life satisfaction dimension was not included because the Pearson correlation test results showed an insignificant correlation with total score IU, prospective IU and inhibitory IU

Discussion

This research shows different results from previous studies. The results of the correlation test carried out show that although overall IU shows a positive correlation with happiness, when testing each dimension shows different results. The previous research shows intolerance of uncertainty heightens existing negative emotional states (e.g., fear and anxiety) and lowering existing positive emotional states (e.g. happiness). The lack of research that discusses issues with specific emotions such as happiness makes it difficult

for researchers to find concepts that can be used to explain this phenomenon.

Perhaps, the argument that can be used is one of the conclusions given by Moris and friends (Morriss, Goh, Hirsch, & Dodd, 2023) in their research, which states that uncertainty in general and uncertainty under ambiguity are more likely to evoke negative emotional states and less likely to evoke positive emotional states. Because happiness is categorized as positive emotions, therefore IU cannot provide a clear prediction regarding happiness. This may explain the reason that even though the results of the correlation test and linear regression test show that there is a significant relationship, the correlation coefficient value and r squared value produced are included in the category of a weak relationship or influence.

The second reason that can be used to explain this phenomenon may be obtained from the measurement scores on the Intolerance of Uncertainty scale and the Oxford Happiness Questionnaire which show that the majority of participants are in a normal (moderate) IU condition and have an ordinary level of happiness (not particularly happy or unhappy). The IU measurement scale was initially intended for participants with psychological disorders such as personality disorders, anxiety and depression (Shihata, McEnvoy & Mullan, 2018). If the results of this research are related to these two things, it can be interpreted that there are factors other than IU that are more influential and determine a person's level of happiness.

To get a more in-depth picture, researchers conducted correlation and linear regression tests between dimensions. From the test results, it was found that IU and its two dimensions did not have a significant relationship with the life satisfaction dimension of happiness. An interesting fact that might be used as an explanation is that the results of life satisfaction measurements carried out by several study centers and studies show that the level of life satisfaction of Indonesians is quite high. Even the Indonesian Central Statistics Agency (BPS) stated that the results of the 2021 survey when the CoVid-19 pandemic was still ongoing showed that 71.49 participants stated that they were satisfied with their lives (Indonesia, B. P. S., 2021, December 27).

This can be interpreted as meaning that despite experiencing the CoVid-19 pandemic which has caused uncertainty in the situation, the majority of Indonesians can still feel satisfied with their lives. In other words, IU does not have a direct and significant

effect on life satisfaction. These results are in line with the results of research conducted by Das, Azmi and Mondal (2022) which stated that IU was not significantly related to life satisfaction during the CoVid-19 pandemic.

This research also shows that IU has a significant negative relationship and influence on the dimensions of self-esteem and confidence. These results are in line with research conducted by Kandpal (2022) which states that IU has a negative relationship with self-efficacy. Self-efficacy was defined by The American Psychological Association (2021) as "an individual's subjective perception of his or her capability to perform in a given setting or to attain desired results" Regarding of that, when a person has high IU, they could decrease their beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Therefore, they will also feel they are not good enough compared to others (have low self-esteem) and feel they do not have confidence to do anything.

Conclusion

This study shows there are positive and significant correlation tests carried between Intolerance of Uncertainty and Happiness. The correlation test between dimensions also shows that both dimensions of Intolerance of Uncertainty show significant correlation with 5 of 6 dimensions of Happiness (positive mindset, joy, confidence, self-esteem and social interaction). On the other hand, the total IU score did not correlate significantly with the life satisfaction dimension of happiness. Only two dimensions of happiness (confidence and self-esteem) shows negative and significant correlations with total score of Intolerance of Uncertainty, prospective Intolerance of Uncertainty and inhibitory Intolerance of Uncertainty.

Suggestion

It is necessary to carry out research using the same variables in different populations to prove whether the results of this research can be used to explain the general population, which also includes participants who have psychological disorders. Research also needs to be carried out using the complete version of the intolerance of uncertainty scale (27 items) to get a clearer picture of the measurement results

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