

# The Role of Irrational Beliefs on Psychological Distress among Female Office Workers in Bali

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## ABSTRACT

**Objectives.** This study examined the association between irrational beliefs and psychological distress among female office workers in Bali, and formulate general equation to predict psychological distress from the irrational belief scores.

**Methods.** A cross-sectional study was conducted among 111 female office workers in Bali. The irrational beliefs were measured by the Smith Irrational Belief Inventory (SIBI) questionnaire and the psychological distress was assessed by a questionnaire quoted from the Brief Job Stress Questionnaire (BJSQ). Multivariable linear regression was performed to evaluate the role of irrational beliefs on psychological distress scores.

**Results.** There was a moderate, positive correlation between irrational beliefs and psychological distress, which was statistically significant ( $r = 0.451$ ,  $n = 111$ ,  $p = 0.000$ ). The R squared was 0.205, indicating that 20.5% of psychological distress variance can be explained by irrational beliefs. The F-ratio in the ANOVA test shows that the independent variables statistically significantly predict the dependent variable,  $F(3,107) = 9.187$ ,  $p < 0.0005$ . The general form of the equation to predict psychological distress from irrational belief scores is: Predicted psychological distress ( $Y$ ) =  $17.909 + (0.392 \times \text{Irrational belief scores})$ .

**Conclusion.** Irrational beliefs are significantly associated with psychological distress among female office workers in Gianyar, Bali. This finding suggests the need for strategies anticipating better health and productivity among female workers.

**Keywords:** *psychological distress, female, irrational belief*

## INTRODUCTION

Organizational productivity needs to be supported by optimal workers' psychological conditions. According to the 2018 Indonesian National Occupational Safety and Health Profile by the Minister of Manpower, Republic of Indonesia, well workers' psychological conditions could impact better productivity and health.<sup>1</sup> A quick survey conducted by Tempo.com found that as many as 72.4 percent of the 2,700 readers who took part in the survey admitted to having mental health problems. This is in line with the findings of Ipsos and the World Economic Forum which recorded those 13 thousand workers in 28 countries experienced mental disorders due to vulnerability to work security and changes in routine. The Director of Mental Health and Drugs, the Indonesian Ministry of Health confirmed an increase in cases of 6.8 percent of anxiety disorders and 8.5 percent of depression. The Ministry noted that in 2020, 18,000 people had mental disorders, 23,000 were depressed, and 1,163 attempted suicide.<sup>1</sup>



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There is lack of data about rational and irrational beliefs among female workers in Bali or Indonesia. Issues related to psychological distress among female workers in Bali should be one of the concerns of the company, the government, and other stakeholders to prevent mental illness and improve productivity. This may lead to the development of a national program in Indonesia as has been done in Japan.<sup>2</sup> Female office workers' performance needs to be supported by well psychological conditions that affect their ability to receive information and make better decisions at work. Psychological distress will affect their work performance and health status. In Bali, where there are lots of social and cultural activities, absence of adequate support system could affect female office workers who face high task demands.<sup>2-4</sup> In the study of Darmayanti and Budarsa, Balinese women who work in the public sphere do not necessarily leave their duties and obligations in the domestic sphere. They continue to carry out family and social activities, and this condition is said to be in a double burden position. On the one hand, they have to struggle in the public sphere to earn an income, while their duties as mothers cannot be replaced by other people who are also termed as undergoing the role of cultural dualism.<sup>5</sup> To meet the complexity of those job demands, optimal individual capacity among workers is also a must. Psychological distress could inhibit their maximum cognitive abilities and productivity. We conducted a previous preliminary study among 30 female office workers in Gianyar Regency (in Bali, Indonesia) and found that the score of their psychological distress was high. It has been proven that irrational beliefs (IBs) influence the emergence of psychological distress.

IBs are one of the factors that play a role in human perception of work conditions. According to Ellis's theory, IB is a belief that creates a tendency to cause failure for someone to achieve personal goals, which is irrational, dogmatic, fanatical, and unrealistic. IB also means that individuals have a tendency to destroy themselves, regret endless mistakes, intolerance, perfectionism, self-deprecation, and avoid a person's growth and creativity.<sup>6-8</sup> People since being born have potentially both rational beliefs (realistic and positive judgment of themselves) and irrational beliefs. One does not realize that their IB system has an impact on their ability to analyze problems or deal with stressors, and even their behavior towards others. A-B-C (Antecedent event - Belief system- Consequence) theory states that the problems faced by humans are not always caused by events that are being experienced, but because of beliefs about the event. A person's belief in the form of perception or view of an event will give consequences on their behavior and emotional condition. This means that the consequences are not a direct result of the events experienced but are caused by the belief system.<sup>7</sup>

IB influences an individual's ability to overcome social problems, and that ability correlates with social competence and psychopathology or maladaptive behavior, psychological distress, and the ability to overcome new problems. So that the IB score is positively correlated with psychological distress.

Depression, anxiety, guilt, and anger are consequences of IB. Persons with dominant irrational beliefs tend to experience psychological distress and are non-optimal in their work performance. It means that it is very important to turn it into rational beliefs to avoid psychological distress. The focus of our study was to explore the irrational beliefs and psychological distress issue among female workers as this group of workers is categorized as workers with high job-demanding tasks. One study of 166 married couples found that women reported a higher number of psychological distress than men.<sup>9</sup> We hypothesize that irrational belief has a role in psychological distress among Balinese female office workers.

One specific parameter explored in this study is IBs among female office workers in Bali as a base data to create an employee assistance program for the future. According to Shimazu and Kosugi, to anticipate workers' mental health problems related to high IBs score, there are several studies show that cognitive restructuring is effective at changing belief systems, increasing cognitive behavioral skills, and reducing psychological distress as well as anxiety.<sup>10,11</sup> The other strategies (hardiness, a sense of coherence, as well as sports participation), are also proven to reduce psychological distress and make them physically and psychologically healthy.<sup>11-13</sup> The benefit of changing the IB to be rational beliefs (RB) improves someone's coping mechanism (where the term coping is a part of a person-environment transaction that occurs when an individual appraises a situation as stressful) and affects their personality constructs.<sup>10</sup> This study aimed to investigate the association between irrational beliefs and psychological distress among female office workers in Bali and formulate the general equation to predict psychological distress from the irrational belief scores.

## MATERIALS AND METHODS

### Study participants

This was a cross-sectional study conducted between May and October 2019. A hundred and eleven participants were involved in this study which was selected by consecutive or time-sequential sampling method. Respondents were female workers, Balinese, representing the government, and private office workers in the City of Gianyar, Ubud, and South Gianyar (Blahbatuh village). A number of these respondents worked at the Library Service, Agriculture Service, Public Works and Public Housing Service, Tourism Office, BKPSDM (Human Resources Service), a private clinic office, and elementary school teachers. The participants were determined with the following inclusion criteria: 1) women, 2) Balinese and Hindus, 3) residing in Gianyar, Bali (the reason for choosing Gianyar regency is for its unique culture, the complexity, and how time-consuming its ceremony preparation is. The other reason is since Gianyar regency is located in the center of Bali, which has many tourist destinations and government offices with most of its employees being Balinese female workers), 4) office workers, and 5) aged 20 to 58 years. They

were excluded if 1) sick and undergoing treatment of any diseases, 2) changed their residency during data collection, and 3) not willing to sign an informed consent or refused to be a study participant.

## Measurements

Irrational belief was measured using the Smith Irrational Beliefs Inventory (SIBI) questionnaire translated to the Indonesian language by Gaghana in the year 2019 with Cronbach  $\alpha = 0.900$ ,<sup>14,15</sup> which contains 24-item statements, i.e., Childlike fantasy, Deep mistrust, Negative fortune-telling, Needless perfectionism, Helplessness, Imperfections/feeling-unlovability, Catastrophizing, Special privilege, Task exaggeration, Unrealistic isolation, Possibilities, “Must, ought, and should”, Rigid, either/or thinking, Needless other-blaming, Unrealistic need for love and approval, Negative spin, Emotion-distorted thinking, Ignoring contrary evidence, Needless self-blame, Regretting the past, Minimizing/avoiding, Mind-reading, What if? what if? what if?, and Fatalism. The range of scores was 1-4, where the scores represent: I Didn't think this way at all = 1; I thought this way a little = 2; I thought this way = 3; I thought this way a lot = 4). Based on the results of the validity and reliability tests, the questionnaire is proven to be reliable and valid.<sup>14</sup>

Psychological distress was measured using a questionnaire containing 18-item statements with 4 Likert's scale that were quoted from the BJSQ questionnaire<sup>16</sup> in the Indonesian version.<sup>17</sup> The author had permission to use BJSQ from Professor Norito Kawakami (who also developed a New Version of BJSQ<sup>18</sup> with Akiomi Inoue et al.) during a short-term study at Tokyo University, Japan. The questionnaire contains the following statements: Very active; Full of energy; Very lively; Feel angry; Inwardly annoyed/aggravated; Irritable; Extremely tired; Exhausted; Weary/listless; Tense; Worried/insecure; Restless; Depressed; Doing anything is a hassle; Unable to concentrate; Feel gloomy; Unable to handle work, and Feel sad. The score ranges from 1-4 (Very rarely = 1; On occasion = 2; frequently

= 3; Almost all the time = 4), but the first three items in the questionnaire were with a reverse score.

Data were presented initially using descriptive statistics, followed by bivariate correlation, and multiple regression analysis.

Ethical clearance for this study was obtained from the Udayana University Research Ethics Committee (Approval No: 1875/UN14.2.2.VII.14/LP/2019).

## RESULTS

The study was carried out among female office workers in Gianyar Bali which involved 111 respondents from 125 invited participants (a response rate of 88.8%). Table 1 shows the descriptive statistics of the respondents' age, length of employment, and scores of IBs and psychological distress.

The data on the marital status among 111 respondents is shown in Table 2. The study shows that participants were mostly married (72.1%).

Table 3 demonstrates a Pearson product-moment correlation analysis that was run to determine the relationship between variables of interest. There was a moderate, positive correlation between irrational beliefs and psychological distress, which was statistically significant ( $r = 0.451$ ,  $n = 111$ ,  $p = 0.000$ ).

A multiple regression analysis was performed resulting in multiple regression coefficients (R) of 0.453, indicating a moderate level of prediction. The R squared was 0.205, indicating that 20.5% of job stress variance can be explained by irrational beliefs. The Durbin-Watson statistics was 1.784, which indicated there was no autocorrelation. The F-ratio in the ANOVA test showed that the independent variables statistically significantly predict the dependent variable,  $F(3,107) = 9.187$ ,  $p < 0.0005$ . This meant the regression model was a good fit for the data.

Table 4 indicates that only irrational belief score variable added statistically significantly to the prediction, coefficient  $B=0.392$ ,  $t=5.244$ ,  $p=0.000$  ( $p < 0.05$ ). The analysis also

**Table 1.** Descriptive Statistics of Respondents' Age, Length of Employment, Irrational Beliefs, and Psychological Distress Scores

Variable	Mean (SD)	Range (Min-Max)
Age, years	37.7 (11.7)	20.0 – 58.0
Length of employment, years	12.4 (9.9)	1.0 – 38.8
Irrational beliefs scores	53.1 (10.6)	30.0 – 75.0
Psychological distress scores	39.0 (9.1)	17.0 – 57.0

**Table 3.** Bivariate Correlations of Psychological Distress, Irrational Beliefs, Length of Employment, and Age

Variables	Pearson Correlation (r)	P-value
Psychological distress vs length of employment	-0.003	0.487
Psychological distress vs age	-0.012	0.451
Psychological distress vs irrational beliefs	0.451	0.000

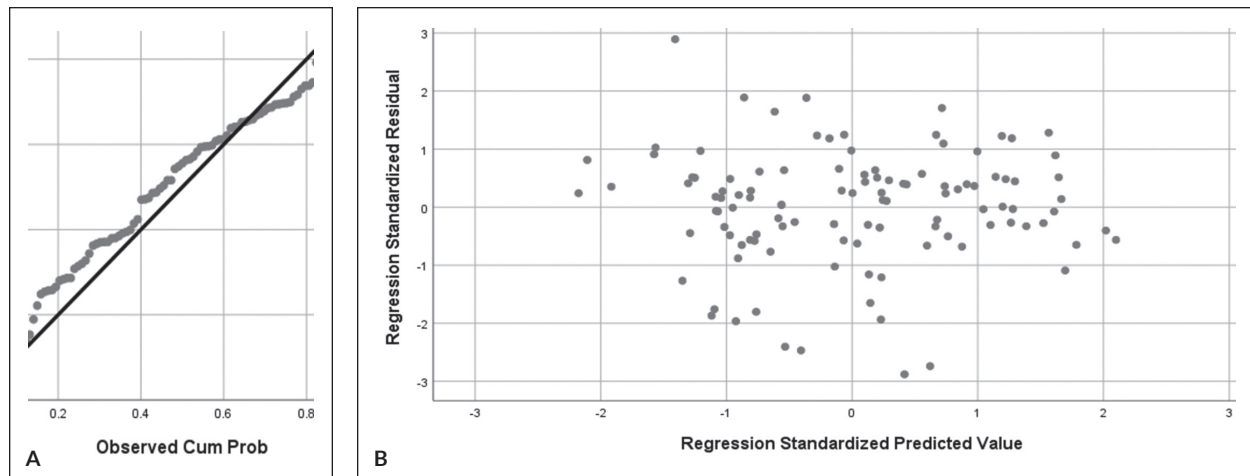
**Table 2.** Marital Status among Participants

Characteristic	Frequency	Percent
Married	80	72.1
Unmarried	30	27.0
Divorced	1	0.9
Total	111	100.0

**Table 4.** Coefficients Table of the Multiple Regression Analysis

Model	B	95% CI for B	t	P-value
(Constant)	17.909	6.455 – 29.362	3.100	0.002
Length of employment	-0.055	-0.421 – 0.311	-0.296	0.767
Irrational belief score	0.392	0.244 – 0.540	5.244	0.000
Age	0.025	-0.281 – 0.332	0.163	0.871

Dependent variable: psychological distress; B: unstandardized coefficients



**Figure 1.** (A) Normal P-P plot of the dose-effect relationship between score of irrational beliefs and psychological distress. (B) Scatterplot between standardized residual and standardized predicted value does not form a specific pattern.

shows that the variance inflation factor (FIV)=1.009, indicates very low collinearity.

The general form of the equation to predict psychological distress from irrational belief scores is:

$$\text{Predicted psychological distress (Y)} = 17.909 + (0.392 \times \text{Irrational belief scores})$$

The normal probability plot shows a linear pattern consistent with a normal distribution. The scatterplot between standardized residual and standardized predicted value does not form a specific pattern, indicating the residual has constant variance or homoscedasticity (Figure 1).

## DISCUSSION

The main finding in this study demonstrates that irrational beliefs (IBs) are significantly associated with the psychological distress of workers. In this study, we also found the general form of the equation to predict psychological distress from irrational belief scores: Predicted psychological distress (Y) = 17.909 + (0.392 x Irrational belief scores). High job demand for Balinese female workers in combination with high scores of IBs could affect their ability to handle complexity of responsibility and decision-making. So, they need a suitable coping mechanism. IB affects workers' coping mechanisms where it changes one's way of thinking about the workload complexity and other demands as a family/social member, so that the individual can easily experience psychological distress. High irrational belief score affects people's desires or expectations of the world they think and how it should be like. They think the world should always be perfect, so they will be hopeless when it doesn't meet the worker's expectations. That is why this condition could easily create psychological distress among Balinese female office workers, in combination with their high job demanding tasks and dual cultural position.<sup>5,14</sup>

In this study, we found two types of IBs that dominantly affect distorted thoughts among participants' perfectionism and childlike fantasy. The perfectionist believes things should be just so one should not make mistakes, or should always try to meet a very high, perhaps unrealistic standard. A slightly different distorted thought is childlike fantasy, the immature expectation that everything should go one's way, that everyone should be nice and love each other, and that all problems should have happy endings, involve thinking in terms of unrealistic Musts, the Oughts, and Shoulds, rather than simple preferences.<sup>14</sup> Female office workers with high irrational beliefs also had multiple tasks at home which can result in significant psychological strain when facing the high demands of office tasks. A negative corporate culture, bad relationship at work, lack of support from co-workers and supervisors, high quantitative and qualitative work load<sup>10</sup>, dual cultural position<sup>5</sup>, and other factors that cause job stress, at the same time co-linear with high IBs score, can increase the psychological distress of female office workers. In this condition, naturally, workers will use coping mechanisms to survive. When coping mechanisms are unsuitable for psychological distress anticipation, mental exhaustion will occur. An imbalance of neurotransmitters will also appear in the brain, and excessive release of cortisol hormone and epinephrine chronically will result in the emergence of psychological distress. It will cause further health problems and decreased work productivity.<sup>19,20</sup>

Several studies that support the seriousness of this problem among workers, as well as a study by Vassou et al. found that individuals with high irrational beliefs who had anxiety symptoms had a 93% excess risk of developing diabetes during a 10-year follow-up with hazard ratio 1.93 as compared to those without anxiety. The same study also found increased inflammation and oxidative stress among high irrational belief workers.<sup>21</sup> Another study found extreme negative self-evaluation (one type of irrational belief) is

related to more controlled (less autonomous) motivation regulation which tends to poorer health.<sup>22</sup>

The emotional center located in the limbic system area of the brain is easily stimulated by perceptions of unsuitable expectations or conditions, so IBs could be an internal stressor in the psychological distress mechanism.<sup>23-25</sup> The finding of our study is in line with a study by Turner et al. who also found higher score of IBs among workers result in psychological distress.<sup>22</sup> There was a study among teachers that found that IB correlated significantly and positively with psychological distress, where IB was a mediator in the relationship between stressors and stress responses.<sup>26</sup> Those findings are also in line with several other studies.<sup>27,28</sup> If there are stressors in persons with a high score of IB, it could increase the feeling of psychological distress. Also, the higher the IB score, the greater the psychological distress, and results in decreased work efficiency or productivity.<sup>26,29,30</sup>

Referring to Ellis, we understand that individuals can have erroneous ideas (destructive, unconscious beliefs, which result in maladaptive tendencies and cause psychological distress) that can be replaced with the correct or more adaptive ideas.<sup>7,8,12</sup> Compared to other countries, job demands of female workers in Bali are similar to India, which are traditional norms that add to the social obligations due to marriage, and women have greater domestic responsibilities than their spouses. The source of stress among them is mainly a combination of work burden at home and the workplace with many additional tasks related to the ceremony, community's culture, and social activity.<sup>4,31</sup> When they suffered from job stress that combines with their IBs, cognitive performance decreases and affects their behavior and ability to make decisions. Perfectionism which is accompanied by perceptions of social conditions and a person's ability when combined with a higher score in IBs could increase workers' psychological distress. IB is the cause of the response of the task performance shown among workers, and it is also causing them to make different cognitive functions (distortion of thoughts).<sup>32,33</sup> Our study also found the formula as a general form of the equation to predict psychological distress scores based on the score of IBs. It means that there is a positive correlation among both parameters on female office workers in Bali. If there is any IBs among workers, the risk they suffered from psychological distress increases.

The psychological distress of female office workers affects their productivity in the office and also their duty as social and cultural, (specifically in Bali) family members. How they decide according to their tasks and responsibilities is influenced by psychological conditions and beliefs. In line with the theory, what people say to themselves or their behavior is based on certain beliefs as well as irrational beliefs. And also, according to Ellis, that person alone is responsible for self-talk (what she says to herself) and her behavior<sup>8</sup>, so it tends to have a type of irrational belief. IBs tend to increase the risk of depression, and that condition raises a cognitive triad - negative views about yourself, the

world, and the future ("I am inadequate and worthless, too many demands are put on my shoulders and nobody wants to understand, and the future feels threatening and hopeless").<sup>33</sup> A study by DiLorenzo et al. found that some irrational beliefs such as demandingness, awfulizing/catastrophizing, low frustration tolerance, and global evaluation/self-downing were directly related to distress levels.<sup>34</sup> Rational and irrational beliefs are valuable constructs because they determine numerous cognitive, affective, and behavioral outcomes, that are important for mental health. Rational beliefs are beliefs that are scientifically warranted, flexible, non-extreme, and usually underpin human survival and fulfillment.<sup>22</sup> On the other hand, many unhealthy emotions are associated with irrational beliefs, such as anger, guilt, and shame, and psychopathological conditions including depression, anxiety, and suicidal thoughts. So, irrational beliefs cause dysfunctional emotions that increase the risk for psychological distress among workers.<sup>35</sup> Based on all the above risks, it means that when we found any IBs among workers, it could be a sign that employee assistance program needs to be created to manage workers' mental health and to increase productivity.

Our findings in this study could provide useful information for the government to improve human resources. We found that irrational beliefs are significantly associated with psychological distress among female office workers in Gianyar, Bali. Based on this finding, further research is needed to explore mental health programs that will anticipate psychological distress among female office workers in Bali according to their irrational beliefs. Recommendations include offices and organizations could develop an employee assistance program which is integrated with the human resources department (based on workers irrational beliefs and psychological distress score data); prioritize the mental health of workers; hold seminars and trainings on mental health for workers; strengthen support system at home through cultural/social activities in the village; and monitor the sustainability of the mental health system and mental health management services.

Limitations of the study are as follows: cross-sectional study that included a limited number of participants; used consecutive or time-sequential sampling method which covered only female office workers in Gianyar instead of stratified random sampling in the whole of Bali, so we can't generalize to a bigger population in Bali or Indonesia; the data source collected was based on the questionnaire which tends to have information bias if participants did not disclose their actual feelings.

## CONCLUSION

In conclusion, irrational beliefs are significantly associated with psychological distress among Balinese female office workers in Gianyar, Bali. The general form of the equation to predict psychological distress from irrational

belief scores is: Predicted psychological distress (Y) = 17.909 + (0.392 x Irrational belief scores). In the future, further research is needed especially with programs or interventions that will train workers to have more rational beliefs to reduce the effects of psychological distress or other illnesses.

### Statement of Authorship

SP contributed in the conceptualization of work and drafting of the manuscript. IMAW contributed in the analysis of data, revising of the manuscript and final approval of the version to be published. IDP assisted in the data collection and English translation.

### Author Disclosure

All authors declared no conflicts of interest.

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