

CONSTRUCT VALIDITY TEST ON THE SUICIDE IDEA INSTRUMENT USING THE CONFIRMATORY FACTOR ANALYSIS (CFA) METHOD

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ABSTRACT

Suicide is one of the ten leading causes of death in America. Every 12 minutes there is one person who commits suicide in America (CDC, 2018). Not only outside the country, suicide is also an important concern in Indonesia. Suicidal ideation is a significant predictor of suicide attempts (Duarte et al., 2019). Suicidal ideation, namely the thoughts and cognitions a person has about suicidal behavior and intentions, can be considered a key marker for the risk of more serious suicidal behavior. There are two dimensions in suicidal ideation behavior, namely specific to thoughts and plans and response and aspects of others (Reynolds, 1991). This research was conducted to test the construct validity of the suicide ideation scale instrument using a sample of 328 students aged 18-27 who studied at universities on the island of Java. Samples were taken using a non-probability sampling method. The analysis carried out in this research used Confirmatory Factor Analysis (CFA) to test the validity of each questionnaire item. The research results prove that all 25 items are unidimensional or in other words only measure one factor, namely suicidal ideation behavior.

Keywords: Construct Validity Test, Suicide Ideation.

INTRODUCTION

Suicidal ideation, namely the thoughts and cognitions a person has about suicidal behavior and intentions, can be considered a major marker for the risk of more serious suicidal behavior (Reynolds, 1991). Another definition from Beck in Beck, Kovacs & Weissman (1979) says that suicidal ideation is an individual who currently has plans and desires to commit suicide but has not yet made a suicide attempt.

Suicidal ideation according to Evans, Farberow, & Associates (2003) is an individual who has thoughts about completing suicide. In line with research from Nock et al., (2008) who say suicide is thoughts of engaging in behavior to end one's life. Another definition, according to Ferreira in Gonçalves et al., (2014) suicidal ideation involves thoughts or ideas about ending one's own life, from various general thoughts about death to more specific and complicated ways of committing suicide.

According to Reynolds (1991) there are two dimensions of suicidal ideation, namely:

1. Specific to Thoughts and Ideas

This dimension can be operationalized as ranging from relatively mild general thoughts about death and wishes to die to serious ideas about specific plans and ways for one to take one's own life.

2. Response and Aspect of Others

This dimension includes thoughts that deal with other people's reactions when someone commits suicide, including other people's perceptions of a person's self-worth after being left behind by someone else and suicide as a means of revenge is a cognition that occurs in this dimension.

INSTRUMENT DESCRIPTION

The measuring instrument uses a suicidal ideation scale developed by Reynolds (1991), namely the Adult Suicidal Ideation Questionnaire (ASIQ), which is a modification of the SIQ. ASIQ consists of 25 items that measure 2 dimensions of suicidal ideation behavior, namely, specific to thoughts and plans and response and aspects of others. ASIQ is designed to measure suicidal ideation in adults in the past month. Respondents rated each item on a 7-point scale ranging from 0 (I never have this thought) to 6 (I have this thought almost every day).

Blue Print Suicide Ideation Scale

No.	Aspect	Indicator	Items	Example Items
1.	<i>Specific to thoughts and plan</i>	• Presence of suicidal thoughts, hopes and ideas	20, 4, 3, 9, 1, 2, 17, 16, 10, 5	I thought about when I would kill myself
2.	<i>Response and aspect of others</i>	• Having thoughts about other people's reactions when someone commits suicide	6, 7, 8, 11, 12, 15, 18, 19, 21, 22, 23, 24, 25, 13, 14	I told other people about my desire to commit suicide
Amount			25	

The data collection instrument in this research is a questionnaire. The questionnaire used is in the form of a Likert scale model consisting of six scales, namely I have never had this thought (0), I have had this thought but not in the last month (1), I have had this thought in the last month (2), I've had this thought for the last 3 weeks (3), I've had this thought for the last 2 weeks (4), I've had this thought for the past week (5), I've had this thought almost every day (6). Respondents were asked to choose one of the available answer options according to what the respondent felt or experienced during the last 1 month.

Category	Favorable	Unfavorable
I never had this thought	1	7
I've had this thought before but not in the last month	2	6
I've had this thought for the past 1 month	3	5
I've had this thought for the past 3 weeks	4	4
I've had this thought for the past 2 weeks	5	3
I've had this thought for the past week	6	2
I used to have this thought almost every day	7	1

To test the construct validity of several measuring instruments contained in this research, the research used CFA (Confirmatory Factor Analysis) with Lisrel 8.70 software. CFA Logic (Umar in Tresniasari, 2018):

1. That there is a concept or trait in the form of an ability that is defined operationally so that questions or statements can be prepared to measure it. This ability is called a factor, while measurement of this factor is carried out through analysis of responses to the items.
2. It is theorized that each item only measures one factor, likewise each subtest only measures one factor too. This means that both items and subtests are unidimensional
3. With the available data, it can be used to estimate the correlation matrix between items that would have been obtained if it were unidimensional. This correlation matrix is called sigma (Σ), then compared with the matrix of empirical data, which is called the S matrix. If the

- theory is correct (unidimensional) then of course there is no difference between the Σ matrix - the S matrix or it can also be expressed as $\Sigma - S = 0$.
4. This statement is used as a null hypothesis which is then tested using chisquare. If the chi square results are not significant $p > 0.05$, then the null hypothesis is "not rejected". This means that the unidimensionality theory can be accepted that the items or subtests of the instrument only measure one factor.
 5. If the model fits, then the next step is to test whether the item is significant or not measuring what it wants to measure, using the t-value. If the t-value results are not significant then the item is not significant in measuring what it wants to measure, if necessary such an item is excluded and vice versa
 6. Finally, if from the CFA results there are items whose factor loading coefficients are negative, then these items must be removed. Because this is not in accordance with the nature of the item, which is positive (favorable).

RESULTS

Researchers tested whether the 25 items used were unidimensional or not, meaning whether the items really only measured the factors they wanted to measure. From the results of CFA carried out with a one-factor model, it turns out that it is not fit, with Chi-Square=1710.29, df=275, P-value=0.00000, RMSEA=0.126. However, after modifying the model, where the measurement errors in the items were freed from being correlated with each other, a fit model was obtained with Chi-Square=157.25, df=158, P-value=0.50184, RMSEA=0.000.

Next, the researcher looks at whether the item measures the factor it wants to measure by looking at significance. A null hypothesis test was carried out regarding the factor loading coefficient of each item. Testing for each item is carried out by looking at the t value > 1.96 , which means the item is significant and vice versa.

Item Factor Loadings for Suicidal Ideation

No.	Coefficient	Standard Error	t value	Significant
1.	0.84	0.05	17.57	√
2.	0.95	0.04	21.35	√
3.	0.94	0.05	20.77	√
4.	0.92	0.05	20.29	√
5.	0.74	0.05	14.47	√
6.	0.81	0.05	16.59	√
7.	0.75	0.05	14.83	√
8.	0.76	0.05	15.25	√
9.	0.82	0.05	16.87	√
10.	0.88	0.05	18.82	√
11.	0.92	0.05	20.08	√
12.	0.84	0.05	17.51	√
13.	0.87	0.05	18.54	√
14.	0.72	0.05	14.12	√
15.	0.93	0.05	20.73	√
16.	0.96	0.04	21.44	√
17.	0.87	0.05	18.38	√
18.	0.91	0.05	20.12	√
19.	0.73	0.05	14.55	√
20.	0.73	0.05	14.68	√
21.	0.79	0.05	16.16	√
22.	0.75	0.05	15.06	√
23.	0.74	0.05	14.63	√
24.	0.93	0.05	20.65	√
25.	0.96	0.04	21.60	√

Note: sign √ = Significant ($t > 1.96$); X = Not Significant

Based on table 3.5, the t value of the 25 items is significant because $t > 1.96$. Next, the researcher looked at the factor loadings of the items, whether there were negative items or not, but it was discovered that there were no items with negative factor loadings. Therefore, the 25 items in the measurement of suicidal ideation are valid in measuring what they are intended to measure.

CONCLUSION

The results of the construct validity test on the suicide ideation scale instrument with a measuring instrument developed by Reynolds (1991) constructed by the researcher himself using the CFA (Confirmatory Factor Analysis) approach prove that all 25 items are unidimensional or in other words only measure one factor alone, namely suicidal ideation behavior. It can be concluded that the one factor model theorized by Reynolds (1991) is acceptable. This is because all of the instrument items meet the criteria as good items, namely (1) have a positive content, (2) are valid (significant, $t > 1.96$), and (3) only have a correlation between item measurement errors that is not more than of three or in other words the item is unidimensional.

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