



## Validating emotional self-disclosure questionnaire on Iranian students

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*Factor Structure*

*Divergent Validity*

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### Abstract

The aim of current research was to investigate the factor Structure, divergent validity and reliability Of the Emotional Self-Disclosure Scale (ESDS). By employing a correlational design and test validation, 500 people were selected among all married university students of Bojnourd by employing multistage cluster sampling. They completed (ESDS). Investigating the validity was performed by employing exploration and confirmatory factor analysis and also divergent validity and validating through internal consistency, Cronbach's alpha and double split method. The Emotional Self-Disclosure Scale (ESDS) consists of 8 subscales, each containing five (5) separate items. The labels and items for each of these subscales are Depression, Happiness, Jealousy, Anxiety, Anger, Calmness, Apathy and Fear Each and every item is coded so that: A=0, B=1, C=2, D=3, and E=4. The five items on each subscale are then summed, so that higher scores correspond to greater emotional disclosure for each type of emotion, as measured by the eight subscales on the ESDS. Confirmatory factor analysis shows a good fitness with 8 factor fundamental models and also one item from all subscales was not meaning full loading factor except jealousy which has two meaningful items. In addition produce a high Cronbach's alpha and double split coefficient for sub variables and the whole scale score. Seven factor structure of (ESDS) can perform as a useful scale in research and clinical settings because of its shortness, multidimensionality and having a good factor and divergent analysis.

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## **1. Introduction**

Showing the fact that who, and in what position I am, clearly and respectfully, and how I like to be treated, show the firmness in relationships, and its core idea is the ability to reveal the thoughts, feelings, interests, experiences and the views on others. Whatever two sides appropriately reveal their relation to other one, both turbidity disappears sooner in relationship, and misunderstandings are resolved. In contrast, non-self-disclosure can be considered dissatisfaction or inconvenience with the relationship (Taylor & Altman, 2001).

Waring, Holden and Wesley (1998) argue that self-disclosure is one of the most important characteristics of good mental function, a sign for personal health and a mean to acquire the healthy character. Sprecher and Hendrick (2003), also states that self-disclosure is a mean to improve the marital relationship. Sternberg (1988) mentioned that verbal and non-verbal self-disclosure is aspects of our own self which others can not realize or understand them without our help. He believes, if a factor of a relationship influences the self-disclosure, it also could affect these factors itself. He believes the couples who reveal themselves more to each other, are more satisfied with their marriage.

The fact that how couples define the relationship (shallow or intimate, stable or unpredictable), can affect the self-disclosure. For example, in a stable and intimate relationship, compared to a shallow and unpredictable relationship, deeper self-disclosure occurs. Time or duration of a relationship is also important. Self-disclosure grows typically and gradually over time, though, sometimes relationships occur rapidly and self-disclosure grows fast (Sprecher & Hendrick, 2004). Moreover, Kito (2005) believes, in the growth period, self-disclosure is more part of the women's life than men. For example, it is accepted biologically that baby girls cry and then talk about their problems, while baby boys are patient and calm, because self-disclosure is more part of the girls' growth process than boys. Therefore, women are more allowed to reveal their personal issues and men are practically less willing to show self-disclosure and are interested to keep their issues inside, while women give a high value on self-disclosure, and expect more self-disclosure for completion of a positive relationship.

Self-disclosure is also related to gender. One of the most influential factors in self-disclosure is gender. Several studies have shown that women show more self-disclosure than men.

Related to emotional self-disclosure, Simon (1967) suggests that marriage is not made in heaven or sky, but in the basic dynamics of the interactions between parents and child which are frequently reactivated in adulthood. Although, keeping to you are a prerequisite for next developed tasks and success in adulthood intimacy, but people can take responsibility for their relations in the present. Attachment: in this stage, the child will distinguish between mother and other people. Previously, the child was the favorite one, but at this stage he/she can be interested in his/her mother. Attachment behavior continues throughout life. The individual seeks the attachment to people and things in life in an attempt to emancipate from pain and loneliness. Through this, the child forms social relationships in accordance to expectations of accountability and availability in childhood. This principle continues in the adulthood. People's attachment style, is rooted in their experience with their early attachment and these expectations, affect people's expectations of relationships.

Self-disclosure in its simplest form refers to methods that allow people to give details of their lives to others, which mean the personal information people willfully offer to others (Stiler, & Philleo, 2003). Harper and Harper (2006), say disclosure occurs when person A knowingly gives information (deliberately) about himself to person B, who generally has no idea about them. On the other hand, he believes that the process, in which information is inadvertently disclosed, is the case of exposure, not self-disclosure.

On the other hand, Stritzke, Nguyen and Durkin (2005) proposed that a non-compulsory exchange of personal data, in a positive relationship (revelation through interrogation is not considered self-disclosure) is a process through which person "A" in a verbal and non-verbal sort, shares information about himself with person "B", who was previously unaware of it. One of the significant differences in verbal self-disclosure with non-verbal self-disclosure is the person has more control over his verbal disclosures. That is why one of the ways to discover

the true desires and motivations of individuals, is through the non-verbal channels: slips of speech, tone, play with things, less looking at your addressee, legs twitching, puttering yourself and continuous head movement.

Self-disclosure or the ability to reveal confidential and hidden secrets is a necessary mental precondition for healthy psychological life. People through self-disclosure, gain sincere and supportive social contacts of which life would be unbearable without them. Self-disclosure is one of the important social skills, and is more complex than it seems at first glance. Who can reveal what to whom, and at what stage (the stage of development of personal relationships) is determined by elaborate set of rules. Some families offer their most private information to encourage their partner. If a person takes precedence for self-disclosure, he/she will encourage others to do so (Wasserman, 2005). Stone (2003) also stated self-disclosure more than anything else leads to others self-disclosure.

Kraus, Stricker and Speyer (2005), proposed that for two reasons clinicians should be aware of detailed disclosure: First, they must know when to disclose themselves to their clients. Second, they have to be aware of the advantages of self-disclosure and the techniques to encourage clients to open and honest disclosures.

Self-disclosure carries elements of "emotional self-disclosure", "informative self-disclosure" and "instrumental self-disclosure". Emotional self-disclosure includes providing love, affection and attention from others and gaining strength from them, to make a man feel valuable for being noticed. This sort of self-disclosure, covers receiving assistance from family, friends, colleagues and neighbors or people who are important, and is consisted of love expression, affection, and considering yourself valuable through a kind of disclosure that brings the sense of emotional well-being (Moreno, 2007).

Informative Self-disclosure occurs when a person helps others, through self-disclosure, to better understand his/her tension status. And through self-disclosure it could be determined, which source and coping strategy is required to deal with the situation. This type of self-disclosure includes taking and giving

helpful tips, information or instructions for coping with major life changes or bestowing meaning to life and the world. Instrumental self-disclosure includes receiving assistance such as services, financial aid, and other devices or particular goods through self-disclosure. The purpose of self-disclosure in such circumstances includes receiving assistance which arise in case of lack of financial resources and the necessity (e.g. money, providing accommodation, ...) or may include problems of daily life (child care, help at home, ...) (Moreno, 2007).

In this respect, social support gained through self-disclosure is defined through the enjoyment of affection, companionship and care of family members, friends and other people, that its role proposed as a stress buffering process, and its psychological benefit may be due to the effects on subjective evaluation of pressure factors, selection of effective ways of coping, sense of self-esteem and individual skills (Kalyuga, 2007).

Self-disclosure plays important role in maintaining the health of people, and to reduce the negative effects of considerable stresses from the environment and society, and as a result on life quality, and declines vulnerability in terms of stress, depression, and also self-mental and physical ailments. In this regard, Hemenover (2003), proposed that the individual based on previous experiences, may conclude that whether or not he/she has gained social support through self-disclosure, and if the answer is yes, interacting with social network increases, and negative effects of life events declines.

Effective and honest disclosure has mental and physical benefits for individuals who face stressful physical, mental and social events. Numerous studies, have pointed out the relationship between high social support and developing depression (Kalyuga, 2007).

Research has confirmed this point and the results show a statistically significant inverse relationship between self-disclosure and depression in a way that depression is decreased with rise of self-disclosure. Regarding the roll of self-disclosure, some researchers stated there is a significant relationship between self-disclosure and predicting mental health of people (Gilbert, 1976; Morry, 2005, Oswald &

Clark, 2003) also pointed out the importance and role of self-disclosure in adaptation to the environment and reduction of stress. The results also showed that self-disclosure enhances the mental health of people.

From the middle of the decade, an increasing interest in the role of self-disclosure is seen as a source of confrontation. A number of researchers have shown the adequacy of the self-disclosure, is directly related to the severity of physical and psychological symptoms reported, or acts as a protection between symptoms and stressful life events (Aron, Mashek & Aron, 2004). House, identified four types of self-disclosure: emotional, evaluative, informative and instrumental. The present study seeks to study in-depth, and determine the factorial structures of emotional self-disclosure and its normalization and codification of an endemic questionnaire in this context.

## **2. Method**

In terms of data collection method, the present research is a descriptive study, and in terms of purpose, it is a fundamental research.

Statistical population of this research included all married graduate students (about 6000 individuals) of Bojnourd University in educational years 2013-2014, out of which 500 were selected as the sample using Krejcie and Morgan table formula (1970) and stage cluster sampling. Stage cluster sampling method has been selected for sampling. First, 3 universities (Azad, Payam-e Noor, and Applied Science and Technology) were selected among all the universities; second, 4 disciplines were selected from each university; third, two entrance years (the second and the third years) were selected from each discipline; and finally, one class was selected from each entrance year. Next, after giving the required explanations, the questionnaire was handed to the students. After that they have been answered and after excluding the incomplete questionnaires, the filled questionnaires were collected.

Since standardizing the questionnaires requires considering the correlation between items with each other and the correlation of each item with the total correlation and also the repeatability of test scores (Hooman, 2009), this method has been used. It seems necessary to mention that in order to prepare

it for the Iranian sample (ESDS), this questionnaire was first translated into Persian and then two English language experts were asked to back-translate it into English. The differences between the English and the Persian versions were evaluated and minimized through "iterative review process". Accordingly, semantic sequence of the two English and Persian versions was accurately considered. After that, several members of the academic board of the university confirmed the content validity and cultural adaptation of this questionnaire. After preparing the tool, the intended sample was selected through sampling and ESDS was collectively presented to the students of the intended universities. After distributing the questionnaires and before answering the questions, instructions were read out loud for the students and they were asked to answer all questions. Finally, after collecting the data and entering them into the computer, considering the objectives of the present research, data were analyzed using LISREL and SPSS software.

## **3. Results**

Data were analyzed using descriptive statistics (frequency, percent, mean) and descriptive-inferential statistics. In order to answer the first question and determine the factor structure and construct validity of the above scale, confirmatory factor analysis through maximum probability for pattern estimation was used, and other indices were used for pattern fit. Hu and Bentler (1995, 1999) mention that multiple indices provide a comprehensive evaluation of the pattern fit. In this research, chi-square index  $\chi^2$ , chi-square index to degree of freedom  $df/\chi^2$ , comparative fit index (CFI), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square residual (SRMR), and root mean square error of approximation (RMSEA) were reported. If chi-square is not statistically significant, it refers to the suitable pattern fit, but this index is usually significant in larger samples and thus it is not a suitable index for pattern fit (Quintana & Maxwell, 1999). Giles (2002) states that if  $df/\chi^2$  is more than 3, it does not show an acceptable fit. Values more than 0.90 for CFI, GFI and AGFI indices (Byrne, 1994) and values less than 0.06 for RMSEA and

SRMR indices (Hu & Bentler, 1999; MacCallum, Brown & Sugawara, 1996) refer to suitable and desirable fit. In order to answer the second question and consider the reliability of the above tool, internal consistency method (Cronbach's alpha) and composite validity were used. In order to answer the third question and determine the difference between emotional self-disclosure and its sub-components with gender, multivariate analysis of variance (Manova) was used.

Total married female students of Bojnourd were 220 and total married male students of Bojnourd were 161 individuals. These female students are sorted by university as follows: 89 from Azad University of Bojnourd, 81 from Payam-e Noor University and 50 from Welfare Applied Science and Technology University, who were 220 individuals in total. The number of male students sorted by university is as follows: 61 from Azad University of Bojnourd, 60 from Payam-e Noor University and 31 from Welfare Applied Science and Technology University, who were 161 individuals in total. Mean, standard deviation, the lowest and the highest score were reported, separated by university and gender. Considering the results of the table, it can be found out that in total, the number of women is more than men, and women have also higher mean than men. In the following section, the results of the

present research are presented sorted by research question.

Emotional self-disclosure scale was considered using confirmatory factor analysis. In this method, each of the items was considered as the observed indicators or variables and each of the 8 scales was considered as latent variables. In order to investigate each of these models, first the fit of the primary codified model was considered. Then, using modification indices, the primary model was reviewed by adding several error covariance, and the fit of the modified model was considered. Table 4.2 and 4.3 show the fit indices of the primary model and the modified model for 8 dimensions of emotional self-disclosure. In order to consider fitness, these measurement models with experimental data of 10 suggested indices in the previous section were used. With a glance on these indices and comparison of them with their critical range (see the previous section), we understand that these models do not have suitable fit with experimental data and thus they need to be modified. For this reason, based on the available modification indices in LISREL output, the best modifications were made. Table 1 shows the fit indices of the modified model for the 8 dimensions of emotional self-disclosure.

Table1. Fit indices of the primary models (before modification) for the 8 dimensions of emotional self-disclosure

| Eight-factor structure | Absolute indices |      |     |             | Comparative indices |      |      |      |      | Other indices |      |       |
|------------------------|------------------|------|-----|-------------|---------------------|------|------|------|------|---------------|------|-------|
|                        | $\chi^2$         | P    | df  | $\chi^2/df$ | GFI                 | AGFI | NFI  | TLI  | CFI  | RMSEA         | RMR  | SRMR  |
| Depression             | 653              | 0.00 | 229 | 5.06        | 0.84                | 0.79 | 0.64 | 0.69 | 0.68 | 0.10          | 0.17 | 0.095 |
| Happiness              | 451.5            | 0.00 | 229 | 3.49        | 0.81                | 0.83 | 0.73 | 0.74 | 0.81 | 0.081         | 0.16 | 0.081 |
| Jealousy               | 479              | 0.00 | 229 | 3.71        | 0.88                | 0.84 | 0.81 | 0.82 | 0.85 | 0.084         | 0.13 | 0.078 |
| Anxiety                | 671.8            | 0.00 | 229 | 5.20        | 0.83                | 0.76 | 0.61 | 0.67 | 0.65 | 0.12          | 0.19 | 0.11  |
| Anger                  | 615              | 0.00 | 229 | 4.76        | 0.85                | 0.80 | 0.78 | 0.77 | 0.81 | 0.10          | 0.14 | 0.083 |
| Tranquility            | 651              | 0.00 | 229 | 5.22        | 0.82                | 0.72 | 0.62 | 0.62 | 0.62 | 0.10          | 0.15 | 0.090 |
| Apathy                 | 453.6            | 0.00 | 229 | 3.49        | 0.88                | 0.85 | 0.76 | 0.78 | 0.82 | 0.081         | 0.16 | 0.083 |
| Fear                   | 480              | 0.00 | 229 | 3.73        | 0.86                | 0.85 | 0.83 | 0.81 | 0.81 | 0.082         | 0.14 | 0.073 |

Table2. Fit indices of the final models (after modification) for the 8 dimensions of emotional self-disclosure

| Eight-factor structure | Absolute indices |  |  |  | Comparative indices |  |  |  |  | Other indices |  |  |
|------------------------|------------------|--|--|--|---------------------|--|--|--|--|---------------|--|--|
|------------------------|------------------|--|--|--|---------------------|--|--|--|--|---------------|--|--|

|             | $\chi^2$ | P    | Df  | $\chi^2/df$ | GFI  | AGFI | NFI  | TLI  | CFI  | RMSEA | RMR   | SRMR  |
|-------------|----------|------|-----|-------------|------|------|------|------|------|-------|-------|-------|
| Depression  | 325.3    | 0.00 | 115 | 2.82        | 0.91 | 0.87 | 0.84 | 0.85 | 0.88 | 0.069 | 0.13  | 0.075 |
| Happiness   | 302.2    | 0.00 | 123 | 2.45        | 0.92 | 0.89 | 0.84 | 0.87 | 0.89 | 0.062 | 0.13  | 0.068 |
| Jealousy    | 205.9    | 0.00 | 98  | 2.1         | 0.94 | 0.91 | 0.89 | 0.91 | 0.94 | 0.052 | 0.11  | 0.061 |
| Anxiety     | 355.5    | 0.00 | 113 | 3.14        | 0.88 | 0.84 | 0.81 | 0.79 | 0.85 | 0.079 | 0.15  | 0.083 |
| Anger       | 226      | 0.00 | 107 | 2.11        | 0.94 | 0.90 | 0.92 | 0.93 | 0.95 | 0.050 | 0.076 | 0.044 |
| Tranquility | 327.7    | 0.00 | 117 | 2.87        | 0.97 | 0.83 | 0.83 | 0.85 | 0.88 | 0.063 | 0.14  | 0.074 |
| Apathy      | 301.7    | 0.00 | 127 | 2.47        | 0.97 | 0.83 | 0.83 | 0.87 | 0.83 | 0.061 | 0.13  | 0.060 |
| Fear        | 201.7    | 0.00 | 97  | 2.7         | 0.97 | 0.93 | 0.89 | 0.91 | 0.94 | 0.054 | 0.14  | 0.063 |

Results of Table 2 show that although chi-square index is significant for all 8 models, since it is sensitive to the number of sample and considering the high volume of the research sample, insignificance of chi-square index is not unlikely, and it cannot be a suitable index for determining the fitness of the models. Nevertheless, all the other 9 indices for this structure are in a desirable level (according to the range of the indices mentioned above). Moreover, these results showed that by modifying the primary measurement models, their fit has significantly increased. The desirable fit of the

modified models is indicative of the confirmation of the factor structure and construct validity of emotional self-disclosure.

In the next step, Fig.1 and Fig.2 show the indices of factor analysis related to the emotional self-disclosure model. These indices which have been presented graphically, include factor loading (one-way arrow from ellipse to rectangle), factor loading significance of each question on its corresponding variable (the red color means insignificance), and residual or error (one-way arrow from rectangle to ellipse).

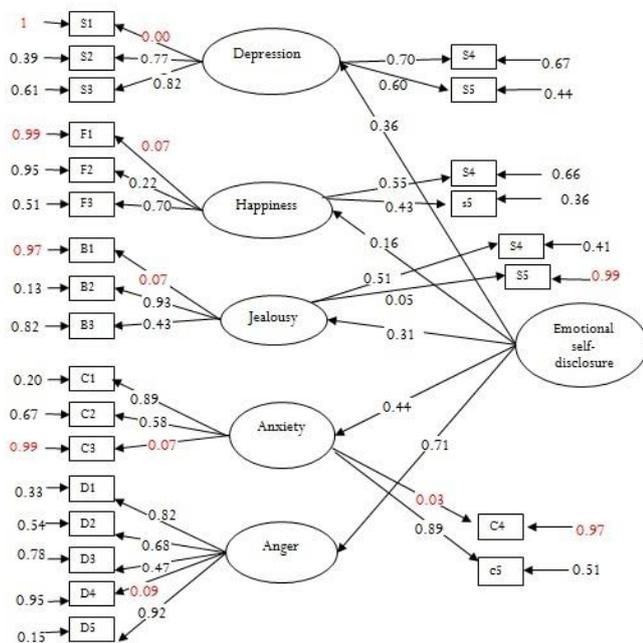


Figure1. Factor analysis indices related to emotional self-disclosure model

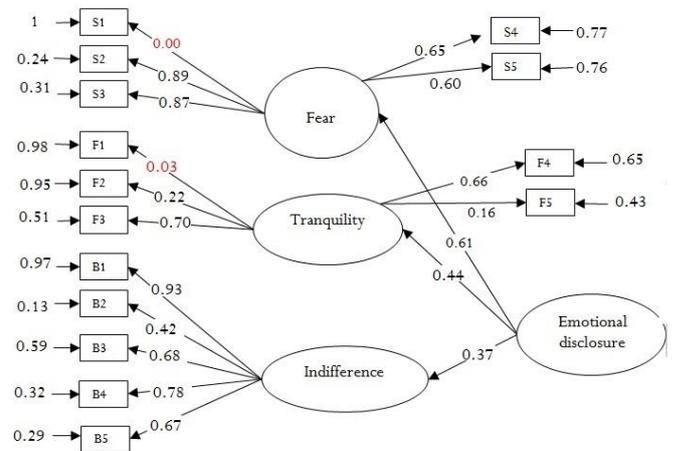


Figure2. Factor analysis indices related to emotional self-disclosure model

As can be seen in Figs. 1 and 2, among 40 items of sub-scales of emotional self-disclosure, 9 items which had insignificant factor loading were omitted and 31 items which had significant factor loading were kept. Among the omitted items, 1 item was related to depression, 1 item to happiness, 2 items to jealousy, 1 item to anxiety, and 1 item to tranquility. All items of indifference sub-scale had

significant factor loading. The results of reliability index and Cronbach's alpha which were used for measuring the reliability of the remaining questions showed that the above factors have suitable

reliability. In the next step, the correlation between 8 dimensions of emotional self-disclosure (latent variables) was considered using LISREL 8.80 software. Table 3 shows the results of this analysis.

**Table3.** The results of correlation between 8 dimensions of emotional self-disclosure

| Variables       | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|---|
| 1- Depression   | 1      |        |        |        |        |        |        |   |
| 2- Happiness    | 0.52** | 1      |        |        |        |        |        |   |
| 3- Jealousy     | 0.71** | 0.60** | 1      |        |        |        |        |   |
| 4- Anxiety      | 0.43** | 0.22** | 0.36** | 1      |        |        |        |   |
| 5- Anger        | 0.76** | 0.19** | 0.79** | 0.22** | 1      |        |        |   |
| 6- Tranquility  | 0.34** | 0.23** | 0.71** | 0.19** | 0.67** | 1      |        |   |
| 7- Indifference | 0.64** | 0.36** | 0.31** | 0.23** | 0.43** | 0.50** | 1      |   |
| 8- Fear         | 0.32** | 0.23** | 0.67** | 0.37** | 0.57** | 0.60** | 0.66** | 1 |

As can be seen in Table 4.4, all the latent dimensions and the observed variables have average-to-high significant correlation with each other.

**Table4.** The results of considering the reliability of emotional self-disclosure dimensions

|              | The number of items | Internal consistency reliability (Alpha) | Composite reliability index (CRI) |
|--------------|---------------------|--|-----------------------------------|
| Depression   | 5                   | 0.72                                     | 0.93                              |
| Happiness    | 5                   | 0.73                                     | 0.90                              |
| Jealousy     | 5                   | 0.80                                     | 0.78                              |
| Anxiety      | 5                   | 0.65                                     | 0.70                              |
| Anger        | 5                   | 0.83                                     | 0.94                              |
| Tranquility  | 5                   | 0.91                                     | 0.71                              |
| Indifference | 5                   | 0.72                                     | 0.73                              |
| Fear         | 5                   | 0.81                                     | 0.97                              |

Results obtained from considering the composite reliability of the 8 factors show that this factor is between 0.70-0.94, which indicates a desirable reliability for this factor. In addition, results obtained from considering the internal consistency of these 8 sub-scales show that these factors are between 0.65-0.83, which indicates a desirable reliability for these factors.

#### 4. Discussion

Results of the present research showed that fit indices of the primary models (before modification) for the 8 dimensions of emotional self-disclosure questionnaire did not have suitable fit with the experimental data and thus they were modified. Results indicated that by modifying the primary

measurement models, their fit was significantly increased. In the next step, factor analysis indices related to the five eight-factor models of emotional self-disclosure questionnaire including factor loadings and factor loading significance of each question on its corresponding variable, residual or error, and regression weight of the first-order latent variables on the second-order latent variable were measured.

Results showed that all the sub-scale items of depression except item S1 which is considered the first item in the primary questionnaire (when you feel depressed), have significant factor loading on their related factor. However, all the sub-scale items of happiness except item f1 which is considered the item 34 in the primary questionnaire (when you feel happy), have significant factor loading on their

related factor. All the sub-scale items of jealousy except item B1 which is considered the item 35 in the primary questionnaire (when you are violent), have significant factor loading on their related factor. Also, all the sub-scale items of anxiety except item c4 and c3 which is considered the item 35 in the primary questionnaire (when you feel sad and when you suffer), have significant factor loading on their related factor. All the sub-scale items of anger except item D4 which is considered the item 13 in the primary questionnaire (when you feel angry), have significant factor loading on their related factor. All the sub-scale items of fear except item s1 which is considered the item 40 in the primary questionnaire (when you are alert), have significant factor loading on their related factor. Finally, all the sub-scale items of tranquility have significant factor loading on their related factor and were not omitted.

Therefore, out of the 40 items related to emotional self-disclosure sub-scales, 9 items which had insignificant factor loading were omitted and 31 items which had significant factor loading were kept. Among the omitted items, 1 item was related to depression, 1 item to happiness, 2 items to jealousy, 1 item to anxiety, and 1 item to tranquility. All items of indifference sub-scale had significant factor loading. The results of composite validity index and Cronbach's alpha which were used for measuring the reliability of the remaining questions of emotional self-disclosure questionnaire showed that the above factors have suitable reliability.

This scale has been designed for measuring the emotional self-disclosure. Results showed that emotional self-disclosure scale has suitable psychometric properties for married students for the above purpose. In fact, specific values of emotional self-disclosure sub-scales were satisfactory in sum and have suitable reliability.

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