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# Relationship between Stress-appraisals and Depression among the Institutionalized Elderly in Korea

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## ABSTRACT

The purpose of this study was to develop a Scale of stress-appraisals of staff's attitude in the institutionalized elderly. We also examined the relationships between the stress-appraisals and depression using the structural equation modeling with the data of 213 institutionalized elderly people. As the results, two factors were extracted from the stress-appraisal of staff's attitude: staff's "oppressive attitude" and "lack of the attitude to pay attention to their saying." Also, it was disclosed that the stress-appraisals significantly affected depression (contribution ratio = 12.3 %). These results suggest that we need improving psychological environment and training staff in institutions for mental health of the institutionalized elderly.

## Ⅰ. Introduction

As nuclear families have been increasing, the institutionalized elderly also have. According to pre-studies (Katz IR et al 1989), it is the one of the biggest event that the elderly are institutionalized and they could be stressed by human relationships, and show depression. Of the human relationships, a relationship between the elderly and the staff in institutions were considered as a factor related with their health or quality of life (QOL). However, there are few studies about the relationship between them and its influence on the mental health of the elderly.

We hypothesize that the elderly would be stressed by staff's attitude in nursing homes, and the stress-appraisals (Lazarus RS et al 1984) could be influence on depression. In order to examine these hypotheses, we developed the stress-appraisals of staff's attitude on the institutionalized elderly scale, and disclosed the relationship between the stress-appraisals and depression using structural equation modeling.

## Ⅱ. Method

### 1) Participants

We first targeted 250 institutionalized elderly over 65 years of age in D city, Korea. All data were gathered with standardized interview methods, including self-rating scales. A total of 213 (male=58, female=155) respondents completed the interview. Their mean age was 81.1(SD=8.82, Range=65-101) and the mean duration of their living in the facilities was 3.43 years (SD=3.43, Range=0.08-20.5). Table 1 shows their demographic characteristics.

### 2) Measures

① Self-rating Depression Scale (SDS-13)

The SDS was used in the present study because it is one of the most widely used self-report measures of depression severity and also because of its relatively balanced item content (Kitamura T et al 1994 ).

The total number of the items was originally 20; six somatic items, six cognitive items, four behavioral items, three affective items and one social relation item. However, we employed only 13 items which factor structure was confirmed using a confirmatory factor analysis (CFA) with Japanese sample (Sugawara M et al 1998). The items were rated on a scale from never (0), to sometimes (1), often (2), and almost all of the time (3). We used the total score of the SDS in analyses.

② Stress-appraisal Scale of Staff's Attitude (SSA)

To examine stress-appraisals of staff's attitude in the institutionalized elderly, we developed a Stress-appraisal scale based on our experience and Stress-appraisals theory 11). It consists 15 items (Table 2) which were rated 0 (Yes) or 1 (No) point.

### 3) Analyses

**Stage 1**: To develop Stress-appraisal Scale

We calculated tetrachoric correlation coefficients and compressed items that have the high correlations (over 0.9) between items to keep from multicollinearity. Next, an exploratory factor analysis (EFA) was conducted for the final items. The factors were extracted using promax solution based on Weighted Least Squares estimator (WLS) (Muthen LM et al 1998). The number of them was determined according to the eigenvalues-greater-than-1.0 rule.

**Stage2**: Confirmatory factor analysis (CFA)

We set factors from Stage 1 as the first factor and Stress-appraisals of staff's behavior and attitude as the upper concept, the second factor. Secondly, the CFA accomplished through the method of structural equation modeling (SEM) were carried out in order to confirm the fitness between the model and the data.

**Stage3**: The relationships between the Stress-appraisals and Depression

We created a causal sequence model in which the stress-appraisals affect depression and examined the fitness between the model and the data, and the relationships with the factors.

Statistical analyses were made by the SPSS 17.0K for Window except EFAs and CFAs carried out using M-Plus 2.01 (Muthen LM et al 1998). The fitness of each model was assessed with the following fit indices; comparative fit index (CFI), Tucker-Lewis index(TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Muthen suggested that the following fit index cut-off value guide for adequately fitting models, when the dependent variables are continuous: CFI>.90, TLI>.95, RMSEA<.05, SRMR<.90. Significance of parameter estimates (loading paths) was assessed with the values of non-standardized coefficients divided by standardized error (corresponding to $t$ values). The values indicating over 1.95 (p<.05) can be judged as statistically significant.

## Ⅲ. Results

1) Descriptive data of the SDS-13 and the SSA

The mean of the total score on the SDS were 27.1(SD=6.87, range = 13~52) (Table 3). The high frequency items in the SAS were x8, x10 and x11 and the low frequency items were x6, x4 and x13 (Table 2).

Table1. Subject Characteristics

| | male (n=58) | female(n=155) | Total(n=213) | |
|---|---|---|---|---|
| mean age (SD) | 77.6(8.36) | 82.4(7.21) | 81.1(7.82) | |
| | | year | n | % |
| duration of living in institutions | | under 1 | 57 | 26.8 |
| | | over 1 under 5 | 99 | 46.5 |
| | | over 5 under 10 | 44 | 20.7 |
| | | over 10 | 13 | 6.1 |
| | mean (SD) | 3.43(3.67) | | |

Table2. Distribution of the Stress Appraisal Scale

| Item | | NO (n) | (%) | YES (n) | (%) |
|---|---|---|---|---|---|
| x1. | I feel that some staff use unpleasat words to me | 164 | 77 | 49 | 23 |
| x2. | There are some staff who are very rude and show inconsistent attitude | 163 | 76.5 | 50 | 23.5 |
| x3. | I feel that some staff try to forcibly inject their thought into me. | 182 | 85.4 | 31 | 14.6 |
| x4. | I feel to be discriminated by some staff | 185 | 86.9 | 28 | 13.1 |
| x5. | There are some staff who warn me against too small things. | 173 | 81.2 | 40 | 18.8 |
| x6. | I feel that some staff demand unnecessary things too much | 190 | 89.2 | 23 | 10.8 |
| x7. | I feel that there are problems of staff's words | 163 | 76.5 | 50 | 23.5 |
| x8. | I feel that there are only few staff to talk to me | 144 | 67.6 | 69 | 32.4 |
| x9. | I feel that there are only few staff who have their responsibility | 164 | 77 | 49 | 23 |
| x10. | I feel that there are only few staff who hear my opinion | 154 | 72.3 | 59 | 27.7 |
| x11. | I feel that there are only few staff who give me a good advice. | 160 | 75.1 | 53 | 24.9 |
| x12. | I feel that there are only few staff who are kind | 167 | 78.4 | 46 | 21.6 |
| x13. | I feel that some staff are lazy. | 184 | 86.4 | 29 | 13.6 |
| x14. | I feel that some staff don't try to solve the problems between users | 179 | 84 | 34 | 16 |
| x15. | I feel that some staff don't come to help me as soon as possible. | 175 | 82.2 | 38 | 17.8 |

Table 3. Distribution of the Self-Rating Depression Scale-13

| Item | | A little of the time | (%) | Some of the time | (%) | Good part of the time | (%) | Most of the time | (%) |
|---|---|---|---|---|---|---|---|---|---|
| y1 | I feel down-hearted and blue | 102 | 47.9 | 67 | 31.5 | 29 | 13.6 | 15 | 7 |
| y2 | I have crying spells or feel like it | 149 | 70 | 44 | 20.7 | 9 | 4.2 | 11 | 5.2 |
| y3 | I have trouble sleeping at night | 103 | 48.4 | 61 | 28.6 | 19 | 8.9 | 30 | 14.1 |
| y4 | I get tired for no reason | 84 | 39.4 | 66 | 31 | 27 | 12.7 | 36 | 16.9 |
| y5 | My mind is as clear as it used to be | 52 | 24.4 | 33 | 15.5 | 32 | 15 | 96 | 45.1 |
| y6 | I find it easy to do the things I used to | 27 | 12.7 | 23 | 10.8 | 28 | 13.1 | 135 | 63.4 |
| y7 | I am restless and can't keep still | 153 | 71.8 | 24 | 11.3 | 13 | 6.1 | 23 | 10.8 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| y8 | I fell hopeful about the future | 129 | 60.6 | 35 | 16.4 | 10 | 4.7 | 39 | 18.3 |
| y9 | I am more irritable than usual | 128 | 60.1 | 53 | 24.9 | 17 | 8 | 15 | 7 |
| y10 | I find it easy to make decisions | 56 | 26.3 | 41 | 19.2 | 25 | 11.7 | 91 | 42.7 |
| y11 | I feel that I am useful and needed | 108 | 50.7 | 46 | 21.6 | 24 | 11.3 | 35 | 16.4 |
| y12 | My lkife is pretty full | 52 | 24.4 | 40 | 18.8 | 32 | 15 | 89 | 41.8 |
| y13 | I still enjoy the things I used to do | 37 | 17.4 | 38 | 17.8 | 28 | 13.1 | 110 | 51.6 |

Mean = 27.1, SD = 6.87, Range = 13～57

## 2) Development of the SAS

First, we extracted factors related with the stress-appraisals of staff's behavior and attitude. As a consequence of calculating tetrachoric correlation coefficients, item x3 highly correlated with x2 and the other items. Therefore, we excluded item x3 and conducted the EFA. In the result, two factors were emerged (Figure 1). The first and second factors were interpreted staff's "oppressive attitude" factor and "lack of the attitude to pay attention to their words" factor respectively. Subsequently, a CFA was performed to determine whether the factor solutions were substantively meaningful and sufficiently explains the data. In the analysis, we constructed the two-factor measurement model, which comprised of five indicators respectively. Consequently, the CFA showed adequate fit with the data: CFI=0.996, TLI=0.998, RMSEA=0.028 and SRMR=0.054. All path coefficients in the model were moderate to high (the first factor: 0.796 to 0.934, the second factor: 0.847 to 0.922) and the t values of the path coefficients in the model were acceptable as the p=0.05 level (Figure 1).

## 3) Relationship between Stress-appraisals and Depression

We created a causal sequence model and examined the fitness between the model and the data, and the relationships with the factors. As a result, the path model had a high goodness of fit (CFI=0.996, TLI=0.998, RMSEA=0.028) and the direct effects on the depression were statistically significant (the effect size=0.351, $R^2$=0.123) (Figure 2). The effect size of each two factors were similar.
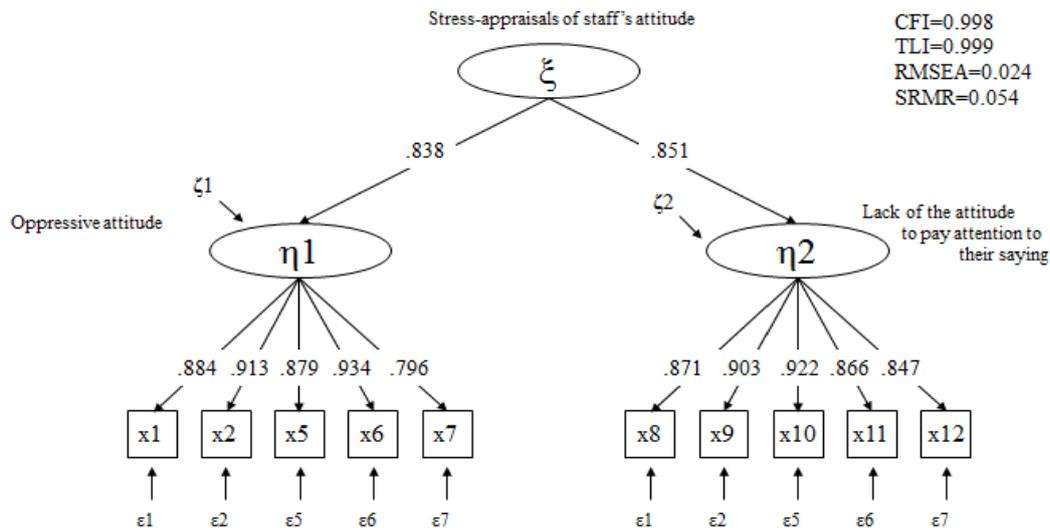
**Fig 1. CFA of the Stress-Appraisal Scale**
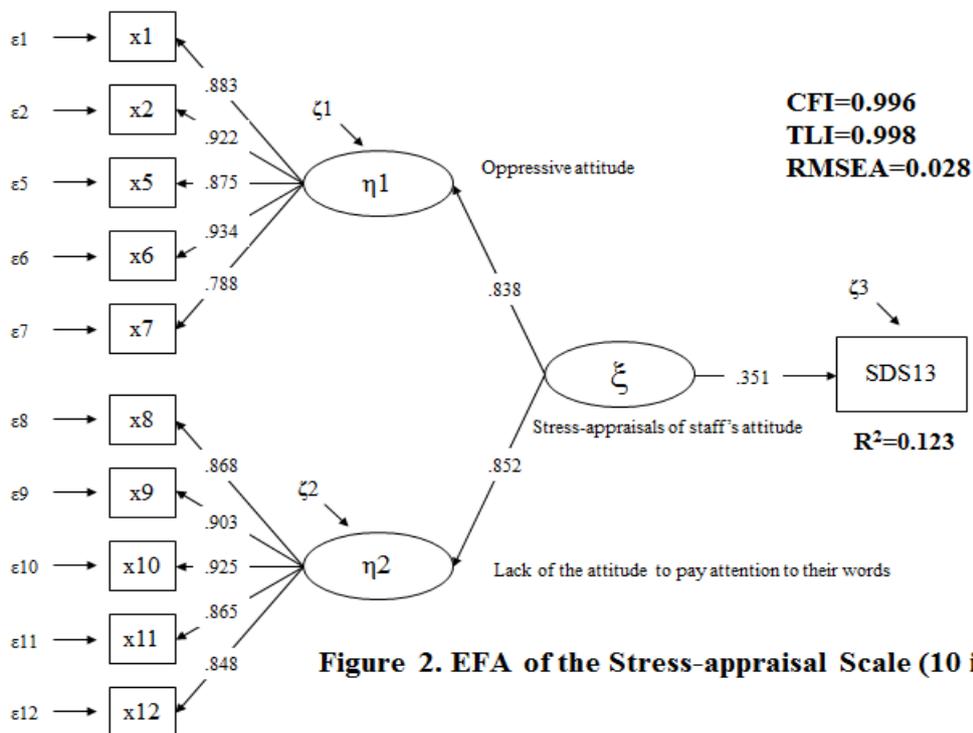


**Figure 2. EFA of the Stress-appraisal Scale (10 items)**

## Ⅳ. Discussion

The main purpose of this study was to develop the Stress-appraisal Scale of Staff's attitude in Korea and to test the relationship between the stress-appraisals and depression among institutionalized elderly.

In the result, we extracted two factors which consist of the stress-appraisals: staff's "oppressive attitude" and "lack of the attitude to pay attention to their words." Also, we set the two-factor measurement model with the two factors and examined the adequate fit of the model with the data. The adequate fit was statistically significant and it supported that the stress-appraisals was related with depression. The direct effect was 12.3% and the effects size of the each two factors was almost similar. It suggests that improvement of psychological environment in institutions, especially in the respect of the both factors should be needed.

The both factors are kinds of psychological abuse (Hudson MF 1989). In other words, psychological abuse, to threat them or say something hurt, might influence on the mental health of the institutionalized elderly. It might be related with the results that quality of life or mental health in the institutionalized elderly is lower than in the elderly at their home (Gonzalez-Salvador T et al 2000).

We found that the institutionalized elderly were stressed by "staff's oppressive attitude" and "staff's lack of the attitude to pay attention to their saying" and the stress affects depression. It was reported that the elderly with depression would be died earlier (Rovner BW et al 1991). These results suggest that we need improving psychological environment and training staff in institutions for mental health and QOL of the institutionalized elderly.

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