

# Research Paper

## Relationship Between Self-Regulation and Balance-Confidence in Active and Inactive Elderly Men



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### ABSTRACT

**Objectives** The aim of this study was to examine the relationship between self-regulation and balance confidence among the active and in-active elderly in the city of Mahabad.

**Methods & Materials** The cross-correlational research included elderly people aged 60 to 85 years and living in Mahabad city. A total of 93 active elderly and 93 in-active elderly were randomly selected as sample. The Balance Confidence questionnaire and Self-Regulation questionnaire were used to gather data. The Kolmogorov-Smirnov test, Pearson correlation, multiple regressions, and independent t test were used to analyze the collected data. This study was performed using SPSS software.

**Results** The results showed that balance confidence had a positive and significant relationship with all the dimensions of self-regulation in the elderly ( $P \leq 0.05$ ). Other than the disclosure feelings component ( $P = 0.250$ ), other dimensions of self-regulation can effect balance confidence. It was also found that there is a significant difference between the active (balance confidence:  $3.2446 \pm 0.63735$ ; self-regulation:  $3.8017 \pm 0.75943$ ) and in-active (balance confidence:  $2.3468 \pm 0.69454$ ; self-regulation:  $2.8208 \pm 0.79782$ ) elderly ( $P \leq 0.05$ ).

**Conclusion** This study confirms that lack of self-regulation in the elderly can lead to decreased physical activity and restrictions. It is suggested that self-regulation should be emphasized in the elderly so that they can overcome their environmental issues and enhance their balance confidence.

#### Key words:

Older adults, Balance confidence, Positive performance, Self-regulation

### Extended Abstract

#### 1. Objective

The main consequences of balance problems in the elderly are falling and the fear of falling; these two consequences affect everyday life activities and the ability to move in home and community [1, 2]. The fear of falling also leads to depression and lower quality of life in the elderly [3]. Studies on

balance confidence have reported its relationship with some functional abilities and personal characteristics in the elderly [4, 5]. In addition to the relationship between balance confidence and balance performance [6, 7], the relationship between balance confidence and physical activity [8] has also been confirmed. One of the factors that can contribute to balance confidence in the elderly is self-regulation. Self-regulation refers to the processes based on which people control their thoughts, feelings, and actions [9]. Therefore, the present study aims to investigate the relationship between

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self-regulation and balance confidence in active and inactive older adults in Mahabad city.

## 2. Methods & Materials

The present study was an applied research in terms of objective and also a descriptive-correlational one in terms of data collection. The entire research process was conducted under the supervision of the local ethics committee of the Department of Sports Sciences in Uremia University. The study population consisted of all older adults aged 60-85 years old in Mahabad city. A sample of 93 active and 93 inactive elders was selected using available sampling method. Here, inactive elderly subjects referred to those elderly individuals who did not have any regular individual or group physical activity in the last few years. The active elderly people were those elderly individuals who performed at least one physical activity for at least one hour per day for three days a week in the last two consecutive years.

A demographic questionnaire, balance confidence scale, and self-regulation questionnaire were used to collect the data needed for this study and measure the research variables. Activities-specific Balance Confidence Scale by Powell and Myers [10] has 16 questions in which the respondents are asked to assess their confidence when performing a range of daily life activities. This scale has been evaluated in Iran by Khajavi [11], and its structural validity has been reported using exploratory and confirmatory factor analysis. The re-test reliability, Cronbach's alpha, and correlation coefficient were 0.82, 0.98, and 0.98, respectively. Also, the Self-Regulation Inventory (SRI-25) is a 25-point test that measures self-regulation in five areas of Positive Actions, Controllability, Expression of Feelings and Needs, Assertiveness, and Well-Being Seeking on a 5-point Likert scale. Data analysis was performed using Kolmogorov-Smirnov Test, single sample t-test, independent t-test, Pearson correlation coefficient, multiple regression analysis. All statistical operations were performed using SPSS version 22.

## 3. Results

Active elderly showed better performance in balance confidence and self-regulation compared with the inactive elderly. This may be because single-sample t-test results for self-regulation ( $P=0.053$ ) and balance confidence ( $P=0.056$ ) were not significant among inactive people while it showed a significant difference

for self-regulation ( $P=0.001$ ) and balance confidence ( $P=0.001$ ) in the active elderly.

The results showed that there is a positive and significant correlation between self-regulation and balance confidence among active and inactive elderly people, and this coefficient was about 0.84. In the various dimensions of self-regulation, this relationship was positive and significant. There was a positive and significant correlation between balance confidence and positive actions (0.75), controllability (0.64), expression of emotions and needs (0.55), assertiveness (0.75), and well-being seeking (0.62) among active and inactive elderly people. Overall, the results showed that all dimensions of self-regulation have a positive and significant relationship with balance confidence in the elderly.

Except for the variable of expression of emotions and needs, other dimensions of self-regulation can affect the balance confidence. The analysis of multiple linear regression in a simultaneous manner suggests that among the five predictors of balance confidence, all dimensions of self-regulation, other than the expression of emotions, have significant weights in the regression predictor equation. Using non-standard regression coefficients and the scores of positive actions, well-being seeking, assertiveness and controllability, the regression equation to predict balance confidence can be written as follows.

$$\text{Balance Confidence} = 0.12 + 0.30 (\text{positive actions}) + 0.15 (\text{well-being seeking}) + 0.14 (\text{assertiveness}) + 0.21 (\text{controllability})$$

0.12 in the equation is a constant or intercept. Regarding the beta coefficient obtained, it can be stated that the variable of positive actions has the most effect on balance confidence of the active and inactive elderly people.

## 4. Conclusion

It is suggested that the elderly themselves can overcome environmental problems. Self-regulation structures provide the most evidence for physical activity modification, and they tend to adhere to exercise by increasing the pleasure derived from exercise [12]. This adherence to exercise and physical activity can increase balance confidence and reduce the level of fear of falling and also prevent the lack of physical inactivity [7, 8, 13]. It seems that fear of falling in older people, which leads to lower self-esteem and self-regulation, can be considered as a barrier to proper physical activity [14]. However, proper physical activity in the

aging period is one of the main factors of successful aging [15]. As a result, it is better to focus on barriers to create an active elderly lifestyle, such as fear of falling, when designing interventions.

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### **Conflict of Interest**

The authors declared no conflicts of interest.