

INFLUENCE OF BALANCE CONFIDENCE IN PERFORMING ACTIVITIES OF DAILY LIVING IN COMMUNITY DWELLING ELDERLY POPULATION

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ABSTRACT

Background- Maintaining balance confidence is crucial as people age in order to avoid unnecessary, self-imposed activity limitations and to avoid a future handicap so aim of the study is to determine association between balance confidence and ADLs in community dwelling elders.

Methodology- a cross-sectional study which includes 40 elderly participants whose age was 60 and above The ABC scale was used to measure balance confidence and Katz Index to assess functional status as a measurement of the client's ability to perform activities of daily living independently.

Result- Mean age of participants in the study was 70.07 ± 7.525 Pearson's correlation was used to know the association between balance confidence and ADLs. The study shows statically significant result ($p=0.001$)

Conclusion- The study concluded that low balance confidence is associated with decline in ability to perform daily living activities in community dwelling elderly population.

KEYWORDS: Balance Confidence, Adls, Elderly, Fear of Fall.

INTRODUCTION

Age-related physical deterioration represents significant risks to successful aging, disability-adjusted life expectancy, and health-related quality of life (HRQL). Even when these physical dysfunctions are not fatal, many elderly individuals experience pain, reduced mobility, and other issues that limit their ability to live independently.(1)

Maintaining balance confidence is crucial as people age to avoid unnecessary, self-imposed activity limitations and to avoid a future handicap. Unfortunately, elderly people who live in the community frequently lose confidence in their ability to balance, whether or not they have previously fallen. Up to 75% of elderly individuals who live in the community report having a fear of falling, a condition that is usually used as a substitute for having decreased balance confidence.(2)

Since the 1980s, the term fear of falling (FOF), defined as a persisting overconcern and anxiety regarding falls, has emerged and gained recognition as a health problem in aging individuals(3) In these persons, fear of falling has been

associated with a variety of adverse outcomes, including activity restriction, functional decline, decreased quality of life and institutionalization(4)However, aside from the act of falling, there is an overconcern about the anticipation of falling; this can ultimately limit one's confidence and willingness to go about their daily activities, thereby restricting their everyday quality of life(5)(6)

Lachman et al (1998) explained that although activities of daily living (ADL) are basic and critical for independence, consequences of the fear of falling may be apparent only in more advanced activities, which may not be essential for independent functioning. Those who have a greater fear of falling in one situation tend to have a greater fear in other situations as well, and avoiding such activities could contribute to reduced quality of life (QoL). Although usually occurring gradually, deterioration of ADL functions is associated with activity restriction and physical deconditioning (Lachman et al., 1998). (7)An individual's decreased confidence regarding balance may impede mobility and community reintegration as much as having a physical impairment (Myers, Fletcher, Myers, & Sherk, 1998; Powell & Myers, 1995).(8)

METHODOLOGY

Study Design Overview

This is a cross-sectional study with the aim of determining the association between balance confidence and activities of daily living among healthy community elderly individuals. The study included 40 elderly participants aged 60 and above who had good sitting and standing balance. The main exclusion criteria were as follows: 1. Uncooperative patients; 2. Patient with cognitive impairment. 3. Patients with any neurological comorbidities.

Ethical approval for the study was obtained in accordance with the institutional research committee. All subjects provided written informed consent prior to the actual procedure. The research was conducted in a community set up.

The participants underwent clinical assessments focusing on balance and balance confidence. Information on age, gender, and duration of complaints was obtained from the participants. The participants' height (in meters) and weight (in kilograms) were measured and recorded, and the body mass index (BMI) was calculated as weight divided by the square of height.

Balance confidence

The ABC scale was used to measure ADL confidence (Powell & Myers, 1995)(8). It is a reliable and valid questionnaire used to assess a broad range of ADL confidence, incorporating more difficult situations and actions performed outside the home. In the ABC scale, the results are scored as a mean of the 16 responses and reported as a confidence percentage. Lower scores indicate lower levels of balance confidence and are associated with balance impairment (Cho, Scarpace, & Alexander, 2004)(9) and falls (Lajoie & Gallagher, 2004)(10). A score of > 80% indicates a high level of functioning, a score of 50% to 80% indicates a moderate level of functioning, and a score of < 50% indicates a low level of functioning (Powell & Myers, 1995).(8)

ADLS

The Katz Index of Independence in Activities of Daily Living, commonly referred to as the Katz ADL, is the most appropriate instrument to assess functional status as a measurement of the client's ability to perform activities of daily living independently. Clinicians typically use the tool to detect problems in performing activities of daily living and to plan

care accordingly. The index ranks adequacy of performance in the six functions of bathing, dressing, toileting, transferring, continence, and feeding. Clients are scored yes/no for independence in each of the six functions. A score of 6 indicates full function, 4 indicates moderate impairment, and 2 or less indicates severe functional impairment.(11)

Statistical Tests

Data analysis was performed using Microsoft Excel and Graph Pad InStat version 3.06, 32 bits for window. The data were entered into an Excel spreadsheet, tabulated and subjected to statistical analysis. The descriptive statistics of the outcome measures are presented as the mean and standard deviation. If the data conformed to a normal distribution, all statistical analyses were conducted using parametric statistics for nonnormally distributed parameters, and we used a nonparametric statistical test. From the data collected, we analyzed the correlation of balance confidence and activities of daily living in a community-dwelling elderly population by using the Spearman correlation test.

RESULT

Table 1 presents the descriptive characteristics of all participants (70.07±7.525 aged years). In our sample, 25 out of 40 participants were young old, 11 were middle old, and 4 were old old. The mean body weight was 67.3±43 kg, with a BMI value of 26.3±4.0.

As shown in Table 2, the total ABC score was 70.1 (± 23.8) for the study sample; approximately 9 participants had a high level of functioning, 18 had a moderate level of functioning, and 13 had a low level of functioning. The mean and SD for the Katz index was (4.05± 0.9), and out of all components, the most component was transferring.

Table 1: Demographic data of Patient characteristics

Patient’s characteristics	N=150
Age Mean± SD	70.07±7.525
Young old	25
Middle old	11
Old old	4
Gender	
Male	29
Female	11
BMI Mean± SD	26.3±4.0
Normal	12
Overweight	15
Obese	13
Height Mean± SD	162.3± 5.7
Weight Mean± SD	67.3±4.3
Occupation	
Farmer	18
Housewife	10
Retried	7
Other	5

Table 2: Mean and SD of components

Component	Mean±SD
ABC Scale	68.23+ 5.7
High level of functioning (N=)	9(22.5%)
moderate level of functioning(N=)	18(45%)
Low level of functioning(N=)	13(13%)
Kartz index	4.05+ 0.9
Bathing	0.69 (0.49)
Dressing	0.57 (0.39)
Toileting	0.88 (0.50)
Transferring	0.86 (0.35)
Continenence	0.59 (0.49)
Feeding	0.46 (0.40)

Table 3: Pearson Correlations for Activities-specific Balance Confidence (ABC) Scale and Katz index

CHARACTERISTIC	ABC Scale
	P value
Katz index	0.001
Bathing	<0.05
Dressing	0.01
Toileting	<0.05
Transferring	<0.001
Continenence	0.79
Feeding	0.06

DISCUSSIONS

This study aimed to investigate the influence of balance confidence in performing ADLs in a community-dwelling elderly population. Forty elderly individuals aged above 60 years were included found that Balance confidence was associated with a decline in the ability to perform activities of daily living in communitydwelling elderly individuals. Similar to our study, a study performed by G Bahat Ozturk (2021) suggested that fear of fall is associated with anxiety and ADL limitations in community-dwelling older adults, apart from the female sex.(12)

In addition, studies have suggested that fear of falling is associated with self-imposed restrictions of basic and instrumental activities of daily living (ADL/IADL), leading to a greater risk for functional decline and falls. The inability to independently perform these activities negatively affects nutritional status and survival among seniors.(13)

Some older adults who restrict activity because of fear of falling may do so as the direct result of an injurious fall.(14)However, the duration of activity restriction after injury is not known. For some individuals, activity restriction from an injurious fall might dissipate over time, perhaps due to recovery from fall-related injuries.

In our study, more than one-third (45%) of community-dwelling elderly individuals had a moderate level of functioning. Studies have shown that balance confidence variesand decreases by 5% over 2 years. Balance confidence was associated with poor physical function and mental health.

Decreasing balance confidence was associated with increasing impairments in balance and hip flexion strength, increasing functional limitations in mobility and chair rises, reduced physical activity levels, increased activity restrictions and decreasing social networks. Decreasing balance confidence plays an important role in disablement.

CONCLUSIONS

- The study concluded that low balance confidence is associated with a decline in the ability to perform daily living activities in the community dwelling elderly population.

Informed Consent

- Informed consent of patient is taken.

Acknowledgement

- We thank the participants who were all contributed samples to the study.

Conflict of Interest

- The authors declare that there are no conflicts of interests.

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