

A social work study on the effect of gender on mental ability and depression among institutionalized elderly versus nursing home residents

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ABSTRACT

This paper studies the level of depression and mental ability among elderly people who live in institutional elderly versus nursing home residents. The investigation designs a questionnaire and distributes it among 345 elderly people who are residences of both places. The study implements Wechsler Memory Scale (WMS) test where mental ability includes seven factors including “general information”, “orientation”, “mind control”, “logical memory” and “repeated figures”, “visual memory” and “learn association”. The study performs some statistical tests and the results show that gender has no impact on two groups of elderly people in terms of mental utilization as well as depression level when the level of significance is five percent.

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1. Introduction

The impact of gender among elderly people has been a concern among scholars (Bowers, 1988). Trahan and Quintana (1990), for instance, investigated gender effects on verbal and visual memory performance in normal adults. Proctor and Hirdes (2001), in another assignment, performed an investigation on the prevalence and clinical correlates of pain in an instance of Canadian nursing residency. They tried to detect whether residents with cognitive impairment experienced lower ratios of health conditions associated with pain (e.g., arthritis) compared with elderly people without cognitive impairment. They reported that the prevalence of detected pain was lower among nursing home residents with higher degrees of cognitive impairment. The study concluded the necessity for more informative tools to assess pain in people with cognitive impairments and their results were in agreement with Sorvillo et al. (1984).

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Tielsch et al. (1995) performed a survey of people who were 40 years of age or older living in nursing homes in the Baltimore region and reported that blindness and visual impairment were highly prevalent among nursing home residents. Mitchell et al. (1997) detected some risk factors influence on survival of feeding tubes in nursing home residents with advanced cognitive impairment. They reported that there were some specific risk factors related to feeding tube placement in nursing home residents with severe cognitive impairment. Pietrokovski et al. (1995) executed a study of the oral conditions of geriatric patients living in institutions in various countries such as the United States, Peru and Argentina.

Kiyak et al. (2006) suggested that daily oral hygiene and regular check-ups by a dental professional were essential by frail elderly, especially in large, proprietary residential places in rural and moderate size areas. Pauly et al. (2007) gave a comprehensive literature review on the present knowledge on the nutritional situation of institutionalized elderly having specific based on the prevalence of protein-energy malnutrition and nutrition-related issues.

Gandjour and Weyler (2008) studied the advantage of preventing hip fractures by hip protectors in elderly institutionalized residents in Germany in terms of cost/benefit investigation and reported that Hip protector use in elderly institutionalized residents in Germany was highly cost-effective. Chen et al. (2009) investigated the perceptions of group music therapy among elderly nursing home residents in Taiwan and reported that healthcare providers need to consider integrating group music therapy into their plans for elderly nursing home residents.

This paper presents an empirical study to measure the difference between mental ability and depression on elderly people who live either at home or in institutional places. The study implements the idea of the literature mostly discussed by Snowden et al. (2003). The primary objective of this survey is to learn whether gender has any impact on the level of depression and mental ability among elderly people who live in different types of residential places.

2. The proposed study

The proposed study of this paper considers all elderly people who live at nursing home residents and those who live at institutional elderly during the year of 2012. In our survey there were 450 elderly people residing in institutions and 3000 ones stayed at home. Among 450 people who lived in residential places, we have found 20 people unable to participate in our survey. Therefore, the population of our survey is summed up to 3430 people. Therefore, we use the following formula to calculate the minimum number of sample size,

$$n = \frac{N \times z_{\alpha/2}^2 \times p \times q}{\varepsilon^2 \times (N - 1) + z_{\alpha/2}^2 \times p \times q}, \quad (1)$$

where N represents the population size, $p = 1 - q$ is the yes/no categories, $z_{\alpha/2}$ is CDF of normal distribution and finally ε is the error term. Since we have $p = 0.5$, $z_{\alpha/2} = 1.96$ and $N = 3430$, the number of sample size is calculated as $n = 345$. In this study, we have selected 301 sample from the people who live at nursing home residents and 44 people from the people who stay at institutional places.

The proposed study of this paper uses Wechsler Memory Scale (WMS) test for the purpose of this study, which is a neuropsychological test designed to measure different memory functions in a person and it is used with people from age 16 through 90. In our survey, there were 205 male, 113 female and 27 people decided not to respond to our gender question. Nearly 70.7% of the participants aged 65-75, 18% of them aged 75-85 and 11.3% did not respond to age question. Table 1 and Table 2 demonstrate some personal characteristics of their participants in terms of their memories.

Table 1

Personal characteristics of the participants who live at nursing home residents

Scale	Mean	Standard deviation	Variance	Median	Min	Max
General information	4.17	1.50	2.24	4	1	6
Orientation	3.36	1.36	1.84	4	1	5
Mind Control	4.47	2.27	5.18	5	0	9
Logical Memory	13.38	4.48	20.40	13	1	23
Repeated Figures	5.15	1.44	2.08	5	2	8
Visual memory	9.01	2.92	8.55	9	4	15
Learn associations	9.25	3.93	15.46	9	2	18

As we can observe from the results of Table 1, elderly people who live at their own houses keep an average of 13.38 as logical memory but the lowest score is associated with orientation scale among these people.

Table 2

Personal characteristics of the participants who live at institutional elderly

Scale	Mean	Standard deviation	Variance	Median	Min	Max
General information	3.23	1.65	2.74	3	1	6
Orientation	3.00	1.29	1.67	3	1	5
Mind Control	4.34	2.22	4.93	4.5	0	8
Logical Memory	13.91	4.12	16.97	14	7	23
Repeated Figures	4.84	1.01	1.02	5	3	7
Visual memory	7.48	2.76	7.65	7	4	15
Learn associations	9.29	2.73	7.47	9	4	16

The results of Table 2 associated with elderly people who live in institutional places are similar to those who live at home.

The proposed study of this paper considers the following two hypotheses.

1. There is a meaningful difference on “mental ability” between female and male elderly people.
2. There is a meaningful difference on “depression” between female and male elderly people.

3. The results

3.1. The impact of gender on mental ability

This section presents the results of the investigation on surveying the impact of gender on elderly people in terms of their genders by measuring “mental ability” among them.

Table 3

Basic statistical observations for the level of mental ability in two groups of elderly people

Mental ability of elderly	Gender	Mean	Std. dev.
Nursing home residents	Male	96.06	12.01
	Female	96.87	9.55
Live at institutional elderly	Male	94.18	8.18
	Female	91.21	5.46

The information of Tables 3 demonstrates that the mean of mental ability of elderly men who live in residential places is relatively higher than women are but this difference does not seem to be significance between these two groups who live at home. We have performed Levin test to examine

whether the level of mental ability is the same between female and male and Table 4 shows our results,

Table 4

The results of Levin test in terms of gender

Dependent variable	F	df1	df2	Sig.
Mental ability	0.55	3	314	0.62

As we can observe from the results of Table 4, there is statistically no difference between two groups of elderly women and men in terms of mental ability when the level of significance is five percent. We have also performed *F* test to verify the difference between two groups and Table 5 summarizes the results of our survey.

Table 5

The results of F-test between gender and mental abilities of the elderly people who live at nursing home residents vs. institutional elderly

Dependent variable	Source	Sum of squares	df	Mean of squares	F	Sig.
Mental ability	Gender	37.88	1	37.88	0.33	0.57
	Gender & Group	115.70	1	115.70	0.99	0.32

The results of Table 5 show that there was no difference between the mental abilities of the elderly people who live in institutional elderly and at nursing home residents ($\alpha=5\%$). We have repeated similar survey in terms of different personal characteristics of elderly people who live either at institutional elderly or at nursing home residents and Table 6 shows details of our findings.

Table 6

The results of testing details of mental utilization

Scale	Gender	Living at	
		Nursing home residents	Institutional elderly
General information	Male	4.28	1.73
	Female	4.17	1.43
Orientation	Male	3.34	1.29
	Female	3.40	1.28
Mind Control	Male	4.24	2.24
	Female	4.85	2.30
Logical Memory	Male	13.39	3.79
	Female	13.09	5.05
Repeated Figures	Male	5.19	0.99
	Female	5.16	1.14
Visual memory	Male	8.85	3.68
	Female	9.31	3.02
Learn association	Male	9.16	2.45
	Female	9.64	3.45

The results of Table 6 state that there are not any meaningful differences between components of two groups. We have performed *F*-statistics to learn whether there is any difference or not and the results are summarized in Table 7 as follows,

Table 7

The results of F-statistics between two groups

Scale	Resource	Sum of Squares	df	Mean Square	F	Sig.
General information	Gender and group	0.04	1	0.04	0.02	0.90
Orientation		3.61	1	3.61	2.02	0.16
Mind Control		2.98	1	2.98	0.56	0.45
Logical Memory		2.45	1	2.45	0.12	0.73
Repeated Figures		0.24	1	0.24	0.12	0.73
Visual memory		14.12	1	14.12	1.64	0.20
Learn association		6.17	1	6.17	0.42	0.51

The results of *F*-value show that gender had no influence on elderly people who live either in institutional elderly or at nursing home residents.

3.2. The impact of gender on depression

This section investigates the results of surveying the effect of gender on elderly people in terms of measuring “depression” among them.

Table 8

Basic statistical observations for the level of depression in two groups of elderly people

Depression of Elderly	Gender	Mean	Std. dev.
Live at nursing home residents	Male	9.84	6.67
	Female	9.12	6.58
Live at institutional elderly	Male	17.89	4.57
	Female	16.06	5.38

The results of Tables 8 demonstrate that the mean of depression of elderly men who live in institutional elderly places is relatively higher than women are but this difference does not seem to be significance between these two groups who live at nursing home residents. We have performed Levin test to examine whether the level of depression is the same between female and male and Table 9 shows our results,

Table 9

The results of Levin test in terms of gender

Dependent variable	F	df1	df2	Sig.
Depression	0.74	3	314	0.42

The result of Table 4 clearly shows that there was statistically no difference between two groups of elderly women and men in terms of the level of depression when the level of significance was five percent. We have also performed *F* test to verify the difference between two groups and Table 10 summarizes the results of our survey.

Table 10

The results of F-test between gender and level of depression of the elderly people who live at institutional elderly versus nursing home residents

Dependent variable	Source	Sum of squares	df	Mean of squares	F	Sig.
Mental ability	Gender	5.48	1	5.48	1	0.24
	Gender & Group	41.22	1	41.22	1.99	0.04

According to the results of Table 10, there was no difference between the levels of depression of the elderly people who live in institutional elderly and those who live at nursing home residents ($\alpha=5\%$).

4. Conclusion

We have presented an empirical investigation to study the effects of depression and mental ability among elderly female and male people who live in institutional elderly versus nursing home residents. The survey designed an especial questionnaire and distributed it among 345 elderly people who lived on both places. The implementation of standard Wechsler Memory Scale (WMS) questionnaire for measuring the effect of gender on two factors including mental ability and depression indicated that there was not any meaningful difference between two groups.

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