

A social work study on characteristics of institutionalized elderly versus nursing home residents

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ABSTRACT

This paper presents a social work study to investigate depression and mental ability among elderly people who live in institutional elderly versus nursing home residents. The study designs a questionnaire and distributes it among 345 elderly people who live on both places. The study uses Wechsler Memory Scale (WMS) test where mental ability contains seven factors including “general information”, “orientation”, “mind control”, “logical memory” and “repeated figures”, “visual memory” and “learn association”. We have performed some statistical tests and the results show that there is not any meaningful difference between two groups of people in terms of mental utilization when the level of significance is five percent. However, in terms of seven scales, there are some meaningful differences on “general information” and “visual memory” between two groups. The study also shows that there is a meaningful difference between two groups of people in terms of “depression level” when the level of significance is five percent.

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1. Introduction

One of the primary concerns in any society is to take care of elderly people in society, appropriately (Bowers, 1988). Many elderly people prefer to spend their lives with others in special institutions while some rich ones prefer to stay at home and their belongings. There are literally various comparative studies on characteristics of institutionalized elderly versus nursing home residents. Proctor and Hirdes (2001), for instance, provided some information about the prevalence and clinical correlates of pain in a sample of Canadian nursing homes. The study aimed to determine whether residents with cognitive impairment experienced lower rates of health conditions associated with pain (e.g., arthritis) compared with residents without cognitive impairment. They concluded that the prevalence of identified pain was lower among nursing home residents with higher levels of cognitive impairment. The study highlighted the necessary for more comprehensive tools to evaluate pain in people with cognitive impairments and the results were consistent with Sorvillo et al. (1984).

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Tielsch et al. (1995) conducted a population-based prevalence survey of people who were 40 years of age or older residing in nursing homes in the Baltimore area and concluded that blindness and visual impairment were highly prevalent among nursing home residents. Mitchell et al. (1997) determined the risk factors and effect on survival of feeding tubes in nursing home residents with advanced cognitive impairment. They concluded that there were specific risk factors associated with feeding tube placement in nursing home residents with severe cognitive impairment. Petrokovski et al. (1995) performed an empirical study of the oral conditions of geriatric patients living in institutions in different countries such as the United States, Peru and Argentina.

Kiyak et al. (2006) recommended that daily oral hygiene and regular check-ups by a dental professional were necessary by frail elderly, especially in large, proprietary homes in rural and moderate size communities. Pauly et al. (2007) presented a comprehensive literature review on the current knowledge about the nutritional situation of institutionalized elderly having specific regard to the prevalence of protein-energy malnutrition and nutrition-related problems.

Gandjour and Weyler (2008) investigated the advantage of preventing hip fractures by hip protectors in elderly institutionalized residents in Germany in terms of cost/benefit analysis and concluded that Hip protector use in elderly institutionalized residents in Germany is highly cost-effective. Chen et al. (2009) analyzed the perceptions of group music therapy among elderly nursing home residents in Taiwan and concluded that healthcare providers should consider integrating group music therapy into their programs for elderly nursing home residents. They also need to design the therapy to add variety to their life, give them a sense of autonomy by having them choose their preferred musical activities, and improve their cognitive function.

In this paper, we present 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 uses the idea of the literature mostly discussed by Snowden et al. (2003). In their word, they performed a literature review on assessment and treatment of nursing home residents with depression or behavioral symptoms associated with deme.

2. The proposed study

The proposed study of this paper considers all elderly people who either stay at home or live in institutional places 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 is the population size, $p = 1 - q$ represents 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 home and 44 people from the people who stay at residential places. We use Wechsler Memory Scale (WMS) test for the purpose of this study.

The WMS test is a neuropsychological test designed to measure various memory functions in a person and it is normally implemented 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 home

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 maintain an average of 13.38 as logical memory but the lowest score belongs to orientation scale among these people.

Table 2

Personal characteristics of the participants who live at institutions

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 the elderly people who live in residential places and those who stay at home.
2. There is a meaningful difference on “depression” between the elderly people who live in residential places and those who stay at home.

3. The results

In this section, we present the results of our survey in terms of measuring depression statistics as well as other necessary observations.

Table 3

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

Depression of Elderly	Mean	Std. dev.	Variance	Median	Min	Max
Live at home	9.45	6.60	53	43	0	23
Live at residential	17.43	4.64	21.60	17.43	10	27

In addition, we have also collected memory utilization for the people who participated in our survey and Table 4 shows the results of our survey.

Table 4

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

Depression of Elderly	Mean	Std. dev.	Variance	Median	Min	Max
Live at home	96.45	11.21	125.74	96	64	118
Live at residential	93.18	7.29	53.12	92	79	116

As we can observe from the results of Table 4, elderly people whom stay at home maintained higher mental utilization compared with people who stayed at home. Before we continue, we need to do Kolmogorov-Smirnov test to make sure the data are normally distributed. In our survey, the results for two variables of depression and mental utilization are 0.80(P-value=0.35) and 0.52(P-value=0.44), respectively. Therefore, we can accept normality distribution when the level of significance is five percent.

3.1. The first hypothesis: Comparing mental utilization between two groups of elderly people

The first hypothesis of this survey compares the mean of mental utilization between two groups of elderly people who live at home and residential places. Table 5 shows the results of our survey

Table 5

The results of testing mental utilization between elderly people who live at home versus residential

Group	Mean	Standard deviation	df	t-student	P-value
Living at home	96.45	11.21	343	1.87	0.06
Living at residential	93.18	7.29			

The results of Table 5 show that there is not any meaningful difference between two groups of people in terms of mental utilization when the level of significance is five percent. We have also performed an individual t-student test among various components of scales and Table 6 shows the results of our survey.

Table 6

The results of testing details of mental utilization

Scale	Living at	Mean	Standard deviation	df	t-student	P-value
General information	Home	4.17	1.50	343	3.85	0.001
	Residential	3.23	1.65			
Orientation	Home	3.36	1.36	343	1.67	0.09
	Residential	4	1.29			
Mind Control	Home	4.47	2.28	343	0.35	0.73
	Residential	4.34	2.22			
Logical Memory	Home	13.38	4.47	343	1.22	0.19
	Residential	12.95	4.12			
Repeated Figures	Home	5.15	1.44	343	1.37	0.17
	Residential	4.84	1.01			
Visual memory	Home	9.01	2.92	343	3.27	0.001
	Residential	7.48	2.76			
Learn association	Home	9.25	3.93	343	0.07	0.94
	Residential	7.29	2.73			

The results of Table 6 clear state that there are some meaningful differences between some components of two groups including “general information” and “visual memory” but the difference is not statistically significance for other components.

3.2. The second hypothesis: Comparing depression level between two groups of elderly people

The second hypothesis of this survey compares the mean of depression level between two groups of elderly people who live at home and residential places. Table 7 shows the results of our survey

Table 7

The results of testing depression level between elderly people who live at home versus residential

Group	Mean	Standard deviation	df	t-student	P-value
Living at home	9.45	6.60	343	7.73	0.001
Living at residential	17.43	6.64			

The results of Table 7 show that there is a meaningful difference between two groups of people in terms of depression level when the level of significance is five percent.

4. Conclusion

We have presented a study to examine depression and mental ability among elderly people who live in institutional elderly versus nursing home residents. The study designed a questionnaire and distributed it among 345 elderly people who lived on both places. The implementation of standard Wechsler Memory Scale (WMS) questionnaire for measuring mental ability demonstrated that there was not any meaningful difference between two groups of people in terms of mental utilization when the level of significance was five percent. However, in terms of seven scales, there were some meaningful differences on “general information” and “visual memory” between two groups. The study also indicated that there was a meaningful difference between two groups of people in terms of “depression level” when the level of significance is five percent.

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