



Review Article

Relationship of Activity of Daily Living with Quality of Life

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ABSTRACT

Introduction: Activity of daily living indicates the overall health status of a person. Quality of life has a strong relationship with the activity of daily living. The quality of life is often poorer among those who can not perform their basic activities in day to day life.

Objective: The present study was planned to find out the relationship between activity of daily living and quality of life of elderly.

Methods: It was a community based cross sectional study conducted in Kolkata and Sonarpur area of West Bengal, India using WHOQOL-BREF questionnaire and Lawton's Instrumental Activity of daily Living Scale (IADL scale).

Results and analysis: Majority of the study participants scored 4-6 according to Lawton's Instrumental Activity of Daily Living scale. It was also found that the scores of quality of life in different domains were significantly positively correlated with the activity of daily living score.

Conclusion: People having better activity of daily living have significantly better quality of life in all domains

Introduction

Quality of life indicates how a person is living and it indirectly implies the standard of physical, mental, social and environmental health status of that person. It is very difficult to quantify or measure the exact quality of life; but different scales have been used from time to time by different researchers to measure the quality of life of people belonging to different age groups, different physical and mental status and the scales have been standardized and validated also. One of the most vulnerable groups for poor quality of life is geriatric age group. In India geriatric is defined as population aged 60 years and above¹. The average life span of people around the world is increasing dramatically and the rate of this demographic change is proceeding more rapidly in developing countries². Old age faces heavy burden of sequel of long term physical illness. As a result their ability to perform day to day activity often deteriorates. The physical dependency on others for performing activities of daily living deteriorates their mental health status and self-esteem. All these can lead to social disconnection and feeling of negligence by family members. As a result the ultimate effect is on quality of life. The study regarding association of activity of daily living with quality of life has been limited particularly from developing country like India. In this background the present study was planned to find out the relationship between activity of daily living and quality of life of elderly.

Materials and methods

Study area

The study was conducted in Kolkata and Sonarpur area of West Bengal, India. Kolkata is the capital of West Bengal and a metropolitan city situated beside river Ganges. Sonarpur is a non-metropolitan town of South 24 parganas of West Bengal.

Inclusion criteria

Elderly people aged 60 years and above who wished to participate in this study were included.

Exclusion criteria

Those people aged less than 60 years were excluded from the study and those geriatric people who did not wish to participate, were also excluded.

Study period

The study period of the present study was from January to December, 2013.

Sample size

As there was no previous study available on the Quality of life of geriatric population in urban area of West Bengal, a pilot study was done on 30 geriatric people before starting of the present study. It showed a mean quality of life score of 56 and overall standard deviation of 6.21. Here the outcome variable is continuous. Sampling distribution of the sample mean is approximately normal. The observations are independent. Relative precision taken is 1%. So, sample size was calculated using the formula

$$n = (z_1^2 - \alpha/2 \sigma^2) / \epsilon^2 \mu^2$$

Where

- z_1 is test statistic
- σ = Standard deviation
- ϵ = Relative precision
- μ = Mean
- $(1-\alpha/2)$ = Desired confidence level
- $z_1 = 1.96$ at 95% Confidence interval
- σ = Standard deviation = 6.21
- ϵ = Relative precision = 1%
- μ = Mean = 56
- $(1-\alpha/2)$ = Desired confidence level = 95%

So, the sample size comes to be 472. So, 472 geriatric people were included in the

present study. 236 people were taken from Kolkata and 236 from Sonarpur.

Sample design

The sample was selected using multistage random sampling technique. In Kolkata district there are 15 boroughs. Out of these one was selected using simple random sampling technique. The selected borough is Borough-VIII. Out of 12 wards in Borough VIII two were selected using simple random sampling technique. In the Sonarpur municipality, two wards were selected using simple random sampling technique. In the selected wards of Kolkata and Sonarpur line list of all people were taken from local municipal authority. People aged 60 years and above were separately line listed and each was given a serial number. From these four line lists (two for Kolkata and two for Sonarpur; total four wards) 118 people were selected by systematic random sampling. So, total 472 geriatric people were studied.

Study tool

Two main tools were used to conduct the present study.

- Lawton's Instrumental Activity of Daily Living Scale

The Lawton Instrumental Activities of Daily Living Scale (IADL) is an appropriate instrument to assess independent living skills (Lawton & Brody, 1969) [115]. The instrument is most useful for identifying how a person is functioning at the present time and for identifying improvement or deterioration over time. There are 8 domains of function measured with the Lawton IADL scale.

- WHOQOL-BREF Questionnaire

Quality of Life BREF questionnaire developed by World Health Organization was used. Permission to use this

questionnaire was taken from World Health Organization (WHO). WHO permitted to use this questionnaire and also sent Bengali version of QOL-BREF questionnaire. WHO allowed using this questionnaire for non-commercial purpose only. This questionnaire had having four domains:

- Physical domain
- Psychological domain
- Social relationship domain and
- Environmental domain

The WHOQOL-BREF, is a subset of 26 items taken from the WHOQOL-100. The WHOQOL-BREF produces a profile with four domain scores and two individually scored items about an individual's overall perception of quality of life and health. The four domain scores are scaled in a positive direction with higher scores indicating a higher quality of life. The 4 domains are then scored, labeled, and transformed to a 0 to 100 scale used to interpret and compare to other validated instrument tools such as the WHOQOL-100. The next step involves transforming each raw score to a 0-100 scale using the formula shown below:

$$\text{Transformed Scale} = \left[\frac{(\text{Actual raw score} - \text{lowest possible raw score})}{\text{Possible raw score range}} \right] \times 100$$

Statistical analysis

After collection of data and compilation in excel sheet the whole data was copied to SPSS sheet and then the analysis was done using SPSS (version 16.0). As the scores of IADL scale and the scores of quality of life are continuous, so relationship between these two were tested using co-relation test.

Result

From Table 1 and Fig. 1 it is seen that 31 participants had activity of daily living score of zero and 53 participants had score of one. So, total 84 participants had

activity of daily living score less than 2. (They were not called for the intervention).

It has also been seen from the above table and figure that majority of the study participants had activity of daily living score of 4-6.

From Table 2 and Fig. 2 to Fig. 5 it has been seen that in all domains of quality of life the score increases significantly with the increase in the activity of daily living score. So, the persons who are more active have better quality of life. The trend lines of the scatter diagrams are upwards and it indicates a positive correlation between these 2 variables.

Discussion

Activity of Daily Living is related to the health status of a person and lesser the Activity of Daily Living Score, worse is the health condition which affects the quality of life. Takemasa S *et al* have found that poor quality of life was found in elderly people having less activity of daily living score³. Oztürk A *et al* have also found that poor physical and functional capacity is significantly associated with poor quality of life⁴. In univariate regression analysis Kumar SG *et al* have found that poor activity of daily living was significantly associated with poor quality of life⁵. In their study by Sugisawa H⁶ and Fujita T *et al*⁷ they have found significant correlation between quality of life score and activity of daily living score. Sasuga noted that extended ADL (8 ADL items and 12 IADL items) are a factor that affects the QOL of the homebound disabled⁸. Suzuki M *et al* found that performing activity of daily living had impact on health related quality of life⁹. In other studies also the effect of activities of daily living on quality of life has been revealed (Ozcan A *et al*)¹⁰ (Natterlund B *et al*)¹¹.

Conclusion

The betterment of overall health status of elderly can improve the activity of daily living and the quality of life of them as well. So, the family member, the society as well as the Government should take utmost care for this vulnerable age group in the rapidly greying India.

Conflict of interest

None declared.

Source of funding

No funding agency. The cost was born by principal investigator.

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Table 1: Distribution of scores of Lawton's Instrumental Activity of Daily Living

Lawton's Instrumental Activity of Daily Living score	No. of persons
0	31
1	53
2	22
3	63
4	73
5	75
6	70
7	42
8	12

Table 2: Correlation of scores of Lawton's Instrumental Activity of Daily Living (IADL) and different domains of quality of life

Comparing groups	Correlation coefficient	P value
IADL score and scores of physical health domain	0.346	<0.001
IADL score and scores of psychological health domain	0.227	<0.001
IADL score and scores of social relationship domain	0.282	<0.001
IADL score and scores of environmental health domain	0.296	<0.001
IADL score and scores of overall quality of life	0.442	<0.001
IADL score and scores of overall health status	0.145	0.02

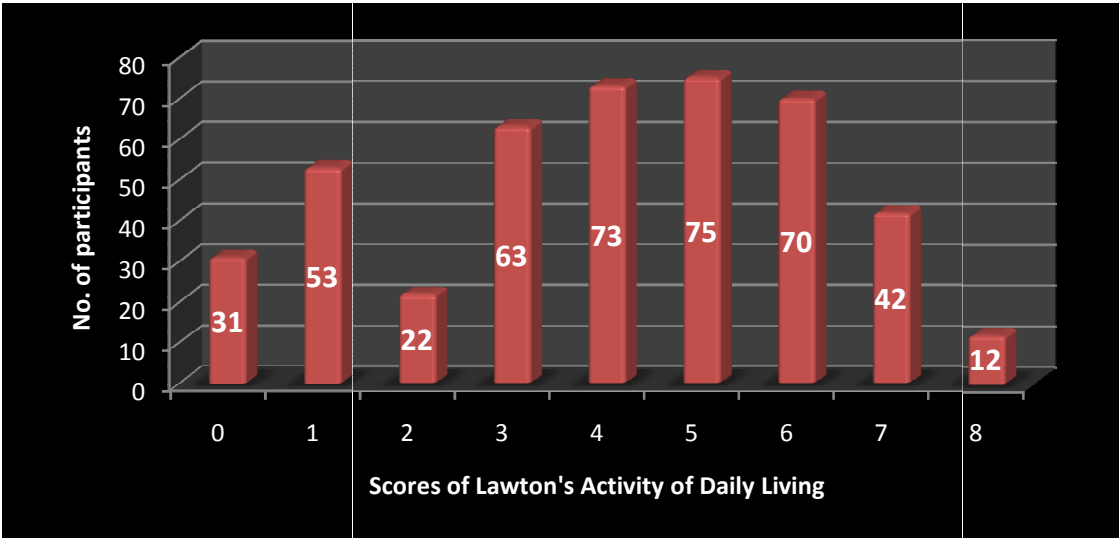


Fig. 1: Scores of Lawton’s Instrumental Activity of Daily Living among study participant.

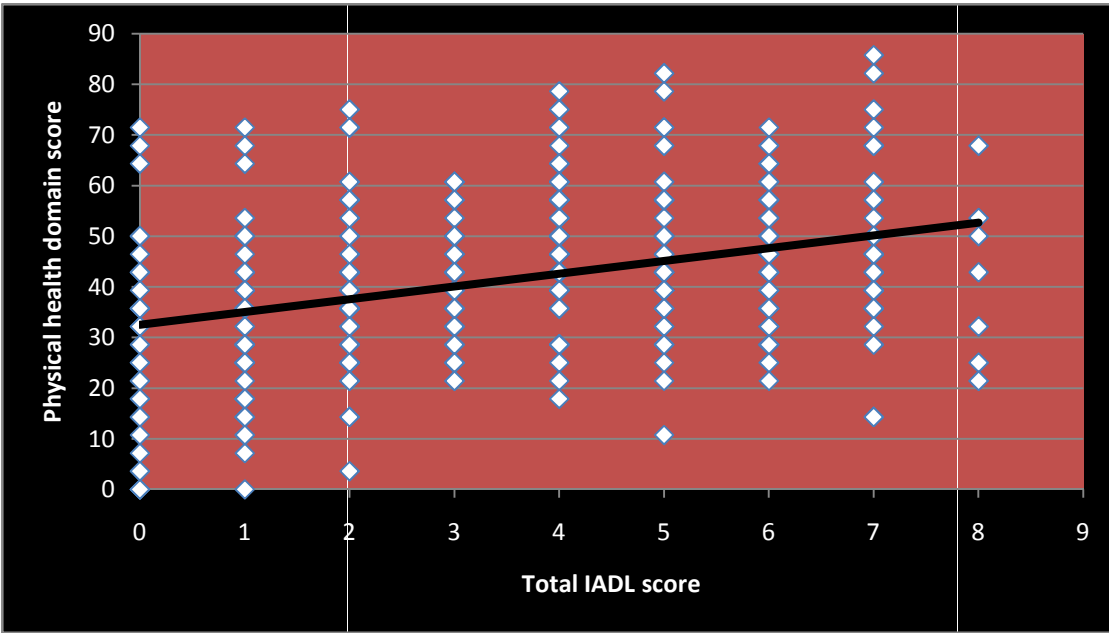


Fig. 2: Scatter diagram showing correlation of Instrumental Activity of Daily Living score with physical health domain score of quality of life.

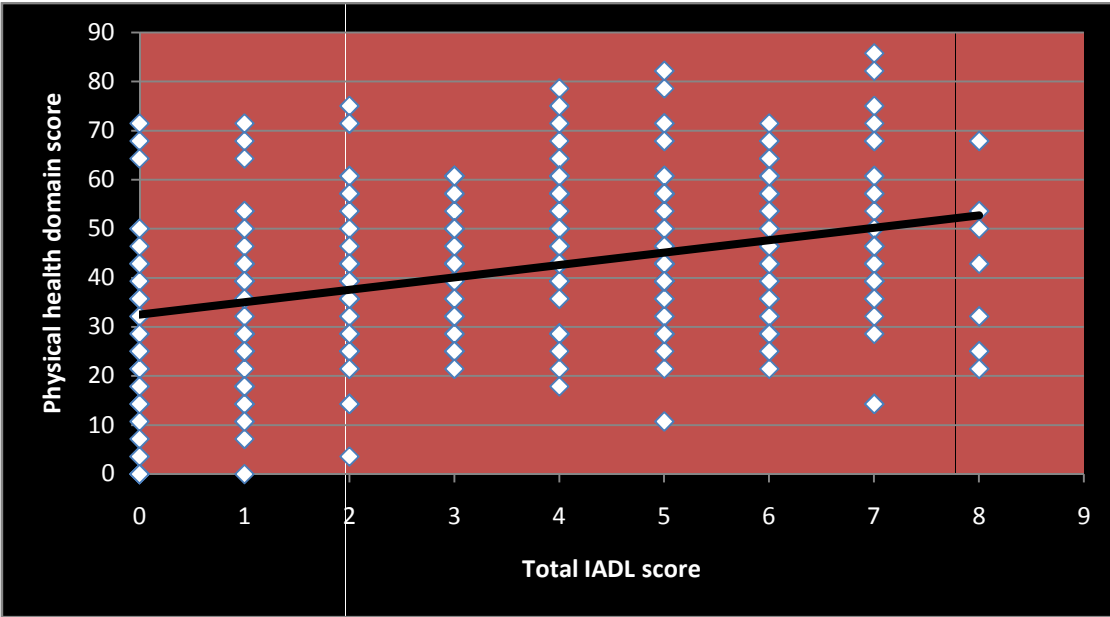


Fig. 3: Scatter diagram showing correlation of Instrumental Activity of Daily Living score with psychological health domain score of quality of life.

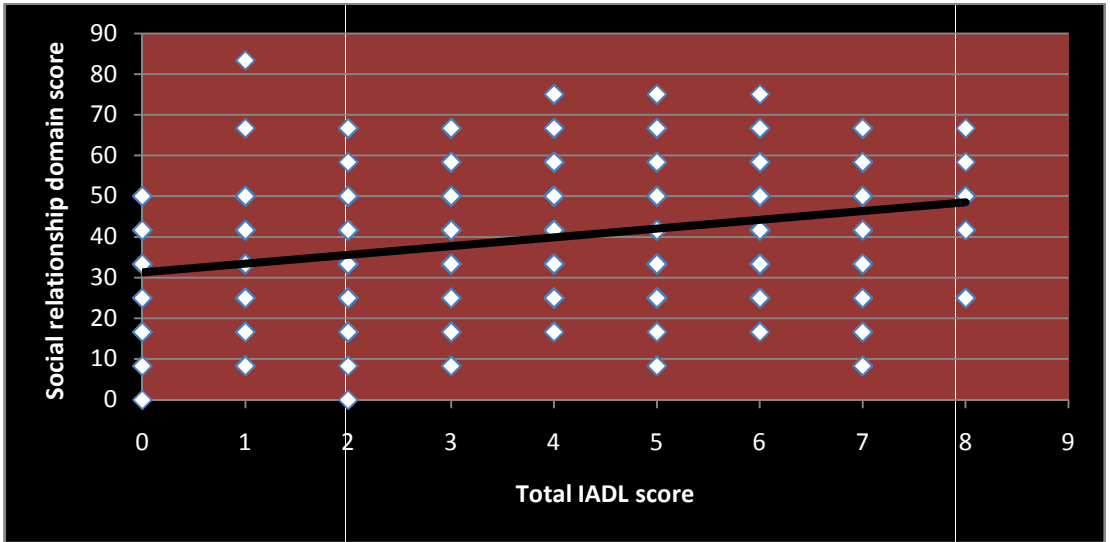


Fig. 4: Scatter diagram showing correlation of Instrumental Activity of Daily Living score with social relationship domain score of quality of life.

