Relationship between Social Support and Instrumental Activities of Daily Living among Older Adults in Assiut City

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Abstract:

Background: *Social support provides the older adults with the opportunity to proper physical function which help preserve their functional abilities.* ***Aim:*** *To examine the relationship between social support of older adults with IADL and its associated factors as personal characteristics and presence of comorbidities.* ***Setting and Subjects:*** *The study conducted in the three geriatric clubs which present in Assiut City and outpatient clinics of chronic diseases at the Main Assuit University Hospital, subjects of 178 older adults selected from the previous areas (a convenient sample of 68 older adults from outpatient clinics and 110 from the three geriatric clubs).* ***Tools****: Three tools were utilized for data collection: Tool I: Part (I): personal data, Part (II): Social support scale, Tool (II): Charlson Comorbidity Index (CCI) and Tool (III): The Lawton Instrumental Activities of Daily Living (IADL) Scale.* ***Results:*** *half of the outpatient sample had moderate social support and the other half had poor social support level, More than one quarter of both groups (29%) had moderate level of comorbidity, some of geriatric clubs sample (5.5%) were dependent in IADL and that percent raised to (20.6%) in outpatient clinics sample.* ***Conclusion:*** *Older adults who attended geriatric clubs that they participate routinely in social contacts and activities had a strong social support and decreased level of IADL dependency. Increased IADL dependency among outpatient clinics sample. There was statistical significant correlation regarding social support of both groups and IADL and with comorbidity level in geriatric clubs group.* ***Recommendation:*** *Development of policies to address the point of social relations and activities for older adults from formal, informal and institutional network.*

Keywords: *Social support, instrumental activities of daily living, comorbidity.*

Introduction:

Nowadays, the increasing proportion of older adults in the population is a worldwide issue, and the promotion of a successful aging society is important for both advanced and developing nations. Considered a recipe for expand healthy life expectancy; social support has gained a great important. When social support can bring about interaction with each other's in the community, older adults tend to feel fulfilled, avoid social isolation and loneliness, they have access to instruction about health promotion, and are able to adapt with stress-related harmful influence on mind and body **(Tomioka et al, 2018).**

There are three mechanisms that explain the relationship between social support and maintenance of functional abilities. First, social support encourages older adults to remain active (e.g. each day getting dressed to leave the house), and these daily routines may help to

preserve physical functioning (the ‘‘use it or lose it’’ hypothesis). Secondly, social participation provides individuals with access to various forms of social connection (e.g. access to resources, or health related instructions) which may promote the functional abilities. Thirdly, social participation may have direct physiological effect such as decrease stress, overcome host resistance, and lowering signs of disease risk, such as inflammation (**Kanamori et al, 2014)**.

Among the social indicators of physical and mental health in populations of older adults, strong social relation with high levels of social support that contributing to a protection and promotion of health and quality of life in old age. Older adults may attain emotional support from their loved ones and feel satisfied when they are involved in their lives. Improving the quality of life has also been related to strong social support among older adults. The effect of social relations on health and well-being appears to differ that is depending on the nature of social contact (eg, friends, children, family members and partner) **(Bélanger et al, 2016).**

The positive social contacts can increase an older adult's psychological and physical function, decreasing their feeling of stress, and help to treat psychological stress and anxiety. Sometimes seeking community services is helpful for social support. There are also several other options for support as that from senior centers, religious institution, assisted living facilities, meal preparation delivery, adult day care centers or home care givers. A few quality activities can useful in helping the older adults quality of life (enjoying hobbies, do exercise, visit clubs and writing **(Health care services inc. 2016 and Rashid et al, 2016).**

Social support includes the provision of psychological and comfort for the individual by significant others such as their family members, neighbors or friends. Older adults with intact social network resources may have a better chance of accessing help and tend to live longer. Older adults that reporting greater numbers of social ties with others and more social support have reported better mental and physical health outcomes (**Zhu et al., 2012).**

Social support may lower the risk of conditions that predispose to mortality, cerebrovascular mortality, non-cancer and circulatory and non-circulatory system disease mortality, acute myocardial infarction, functional disability, motor decline, cognitive impaired and depressive symptoms. Social participation may thus be health promoting and wellbeing across a wide range of outcomes **(Kanamori et al, 2014).**

Two types of social contacts which includes emotional support that referring to the amount of caring and understanding from others (e.g., express feelings), and instrumental support that receiving help, assistance or aid with special needs and daily activities (e.g., cooking meals, filling in forms, repairing things). Both types of support included in the social relationship. Receiving social support has the force to stimulate a productive lifestyle and improve coping with stressful life events when it is emotional in nature, and succeeds in inducing a sense of social wellbeing **(Ellwardt et al, 2013)**.

Instrumental Activities of Daily Livings(IADLs) are the normal routinely daily duties, it is important to concern about the person's ability to manage their instrumental activities of daily living that includes shopping, laundry, cooking, telephone/communication, medication management, household maintenance, money management and driving/transportation **(Tomioka et al, 2017 and Center for elder research, 2018).**

Significance of the Study

Older adults that they are more socially active have better physical function than their inactive counterparts, such as decreasing rates of disability, motor decline, dependent in their activities of daily living (ADLs), and poor mobility. As a result of urbanization and as a result of the migration of the young adults from rural to urban areas, more older adults are now living alone leading to poor social support and reduced social interactions **Tomioka et al., 2017**. In our society, no studies of social support issue among older adults that focused on IADL decline and so it is important to examine social support and its relation to the IADL and the associated factors as personal characteristics and presence of comorbidities.

Aim of the research:

To examine the relationship between social support of older adults with IADL and its associated factors as personal characteristics and presence of comorbidities.

Research Questions:

- Is there a relation between social support of older adults with IADL and its associated factors as personal characteristics and presence of comorbidities?

Subjects and Method:

Research design:

A descriptive correlational research design was used in this study.

Setting:

The study conducted in the three geriatric clubs which present in Assiut City and outpatient clinics of chronic diseases (diabetic clinic, internal medicine clinic, and chest and cardiology clinics) at the Main Assiut University Hospital.

Subjects:-

A subjects of 178 older adults from the above mentioned settings (a convenient sampling of 68 older adults from outpatient clinics) in three months from the first of June to the end of August 2018 and 110 older adults from the three geriatric clubs according to sample size calculation equation according to **Steven, (2012).**

$$n = \frac{N \times p(1-p)}{[[N-1 \times (d^2 \div z^2)] + p(1-p)]}$$

N=total patient population size
Z = confidence levels is 0.95 and is equal to 1.96
D= the error ratio is = 0.05
P= the property availability ratio and neutral = 0.50

Tools of data collection:

Three tools utilized for data collection.

Tool I: Data collected through face to face interview by the researchers with participant using a uniform protocol which was set up to minimize error and bias.

Part (I): Personal data which consisted of age, gender, residence, level of education…etc.

Part (II): Social support scale*:*

Social support data were collected through the use of the Multidimensional functional assessment questionnaire that was developed by **Eric Pfeiffer (1975)** and valid and reliable by **El-Agamy, (2011).** It contained four measures of social support that reflect objective and subjective dimensions**.** These measures are:

1- **Marital status**, economic status and living status.

2- Perceived positive support from relatives and friends:-It included the following:-

a) The number of persons the elderly usually visits in their homes.

b) Number of telephone calls to friends or relatives in the past week.

c) Number of times spent with a relative or a friend in the past week.

d) Presence of someone the elderly can trust.

e) Feeling of loneliness.

f) Satisfaction with contact with friends and relatives.

g) Presence of someone who would provide help to elderly when needed.

h) The number of neighbors the elderly usually communicates with them and visits them.

i) The relationship with married sons.

j) The sharing in raising grandchildren.

3*- Subjective feeling of loneliness:* This was related as: quite often, sometimes and almost never or not answered.

4- Social support was also sleeked through items related to:-

A- Participation in outdoor social activities (clubs, coffee, recreation actives).

B- Spiritual activities (number of times going to mosque or church).

Social support consisted of 16 items. The maximum score was 32 and the minimum was zero. Score of 25 or more indicated strong social support; 15-24 is moderate, while less than 15 is Poor social support. The Cronbach's alpha for reliability was 0.81.

Tool (II): Comorbidity assessment: The Charlson Comorbidity Index (CCI) **(Charlson et al., 1987)**. The CCI is an age-dependent prognostic score based on 17 disease categories. The Cronbach's alpha for reliability was 0.91. Patients were divided into four groups: patients without any comorbidity; mild with CCI scores of 1–2; moderate with CCI scores of 3–4; and severe with CCI scores ≥5.

Tool (III): The Lawton Instrumental Activities of Daily Living (IADL) Scale. **(Lawton & Brody, 1969)** was developed to assess more complex activities (e.g., Shopping, Cooking, Laundry, Telephone/Communication, Household, Maintenance, Medication Management, Money Management and Driving/Transportation).each category scored from 0 to 2. A score of 8-16 means dependent, score of 1-7 need assistance in and zero indicates independent. The Cronbach's alpha for reliability was 0.75**.**

Method:

An official permission to conduct the study was obtained from the clubs managers and directors of outpatients clinics at the main Assiut university hospital.

A review was done for literature related to relation between social support and IADL among older adults using books, articles, periodicals and to be acquainted with the various aspects of the problem and to design the data collection tools.

Pilot study:

A pilot study was carried out on 17 elderly persons to assess the clarity, reliability of the study tools, and time needed to fill each tool. The necessary modifications were done as revealed from the pilot study. The sample of pilot study was excluded from the total sample to assure the stability of the result. Verbal consent was obtained from elderly

Data collection:

After obtaining the official approval, data were collected by using previous tools. The study started in three months from the first of June to the end of August 2018, the researcher collected data three days per week, 4 hours each day from 9 am to 1 pm and the average number which was interviewed was 4-5 older adults per day. The researchers were clear up the purpose and nature of the study to each patient who agreed to share in the study prior to answering the questions. The approximate time spent was around from 20 to 30 minutes to fill the assessment sheet.

Ethical considerations: - The verbal agreement for participation of the subjects was taken after the aims of the study were explained. They were given an opportunity to refuse to participate and they were notified that they could withdraw at any time. Also they were assured that, the information will be remained confidential and used for the research purpose only.

Statistical analysis:

The data were tested for normality using the Anderson-Darling test and for homogeneity variances prior to further statistical analysis. Categorical variables were described by number and percent, where continuous variables described by mean and standard deviation (Mean, SD). Where compare between continuous variables by t-test \and ANOVA Test. A two-tailed $p < 0.05$ was considered statistically significant. Using spearman Correlation to appear the association between scales .All analyses were performed with the IBM SPSS 20.0 software.

Results:

Table (1) revealed that more than half of studied sample in clubs area and majority in the outpatients' clinics (50.9%) and (82.3%) respectively aged between 60 -69 years.

As regard to education, more than half of the outpatient clinics sample were illiterate (52.94%). The highest reported percentages of university education (41.82%) were sample of geriatric clubs. Most of study participants (89%) attended geriatric clubs living at urban area while most of outpatient clinics sample (70.6%) from rural areas.

As shown in Table 2: most of the participants at geriatric clubs had moderate social support (78.18 %) followed by strong social support (12.73%) while in outpatient sample founded that one half of them (50%) had moderate social support and the other half had poor social support. There was high significant difference between sample attended geriatric clubs and outpatient clinics regard to social support. More than half of both groups 29% had moderate level of comorbidity. There was no significant statistical difference between sample of geriatric clubs and outpatient clinics for Charlson Comorbidity Index P= 0.669.

Figure 1: showed the level of IADL, it was observed that some of geriatric clubs sample 5.5% was dependent in IADL and that percent raised to 20.6% in outpatient clinics sample.

Table (3): cleared the relationship between Social Support Scores and demographic data of the studied groups. There were statistical significant differences regarding social support scores and age, sex, educational level and residence.

Table (4): demonstrated the relationship between IADL levels and demographic data of the studied groups. There was a statistical significant difference regarding IADL levels and their demographic data in age, sex, education and marital status.

Table (5): revealed the correlation co-efficient between social support scores with CCI and IADL according to place. It was observed that there was a statistical significant correlation regarding social support scores and IADL P <0.001**.

Table (1): Frequency distribution of the studied sample according to their demographic data (no= 178).

Personal data	Geriatric Clubs(No=110)		Outpatient clinics No= 68		P.Value
	No	%	No	%	
Age:					
60-69	56	50.91	56	82.35	0.000
70 and more	54	49.09	12	17.65	
Sex:					
Female	104	94.55	48	70.59	0.000
Male	6	5.45	20	29.41	
Education:					
Illiterate	0	0.00	36	52.94	0.000
Write and read	8	7.27	10	14.71	
Preparatory	22	20.00	10	14.71	
Secondary	34	30.91	8	11.76	
University education	46	41.82	4	5.88	
Residence:					
Urban	98	89.09	20	29.41	0.000
Rural	12	10.91	48	70.59	
Marital Status					
Married	90	81.82	46	67.65	0.000
Widow	16	14.55	22	32.35	
Single	2	1.82	0	0.00	
Divorced	2	1.82	0	0.00	
Living condition					
Alone	12	10.91	26	38.24	0.000
With family	98	89.09	42	61.76	

* **There is significant difference - Significant at P < 0.05**

Table (2):- Distribution of Social Support levels and CCI among the studied groups according to place

	Geriatric clubs		Outpatient clinics		P.Value
	No=110	%	No=68	%	
Social Support					
Poor	10	9.09	34	50.00	0.000**
Moderate	86	78.18	34	50.00	
Strong	14	12.73	0	0.00	
Charlson Comorbidity Index					
Mild (1–2 diseases)	74	67.27	40	58.82	0.669
Moderate (3–4 diseases)	32	29.09	20	29.41	
Severe (≥5 diseases)	4	3.64	8	11.76	

** **There is high significant difference**

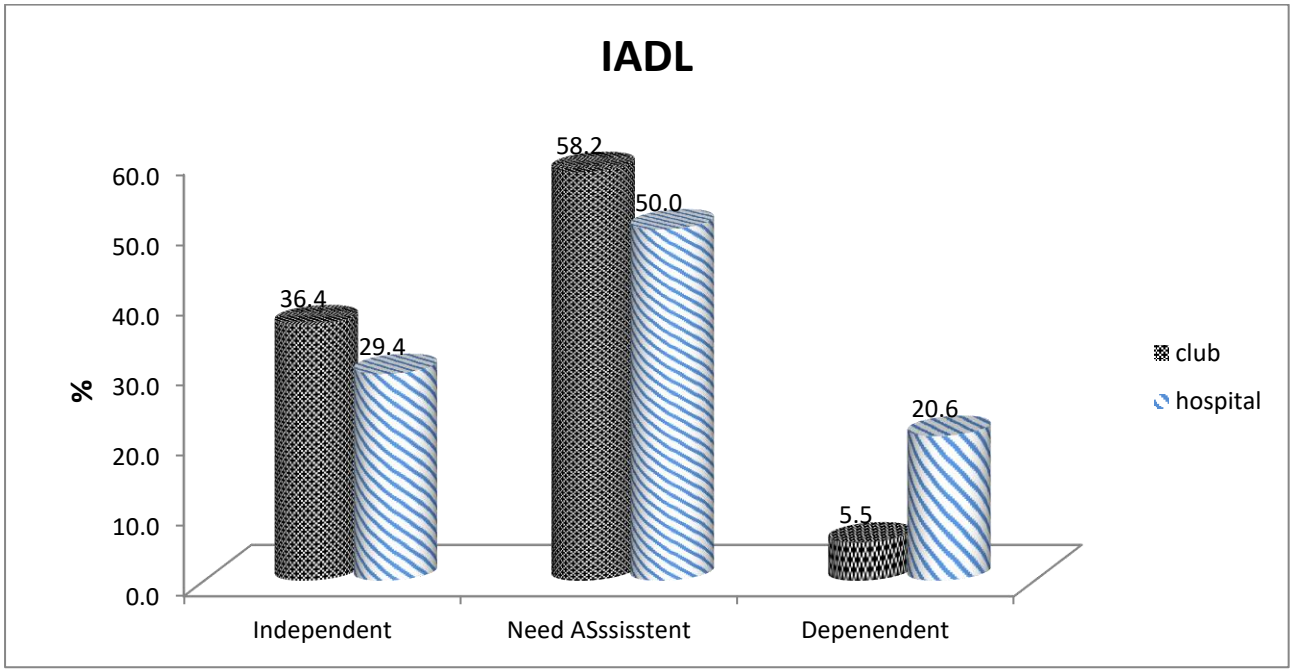

Figure 1: Distribution of IADL of the studied groups according to place.

Table (3):- Relationship between Social Support Scores and personal data of the studied groups

Demographic data	Social Support Scores			
	Geriatric clubs		Outpatient clinics	
	No=110	Mean±SD	No=68	Mean±SD
Age				
60-69	56	19.46±3.79	56	16.68±4.63
70 years and more	54	21.93±2.7	12	14.67±3.06
P. value	<0.001**		0.012 *	
Sex:				
Female	104	20.85±3.48	48	13.33±4
Male	6	17.67±2.88	20	17.9±3.54
P. value	0.030*		<0.001**	
Education:				
Illiterate	-	-	36	13.5±3.99
Read and write	8	17.5±3.42	10	13.4±5.52
preparatory	22	20.27±4.34	10	17±2.58
Secondary	34	20.71±2.76	8	16.25±4.74
University education	46	21.39±3.36	4	19.5±0.58
P. value	0.031*		0.012*	
Residence:				
Urban	98	20.71±3.66	20	15.2±4.75
Rural	12	18.33±1.97	48	14.46±4.24
P. value	0.029*		0.528	
Marital Status				
Married	90	21.33±3.18	46	16.13±3.56
Widow	16	16.75±3.21	22	11.64±4.44
Single	2	21±0	-	-
Divorced	2	22±0	-	-
P. value	**<0.001****		**<0.001****	
Living condition				
Alone	12	20.5±2.75	26	11.92±4.44
With family	98	22.69±3.61	42	16.38±3.39
P. value	**0.012***		**<0.001* ***	

Independent T- test*statistically significant difference at P. value <0.05,statistically significant difference at P. value <0.01,**

One way Anova *statistically significant difference at P. value <0.05.

Table (4):- Relationship between IADL levels and personal data of the studied groups

Data	Geriatric clubs							Outpatient clinics						
	Independent		Need Assistant		Dependent		P. value	Independent		Need Assistant		Dependent		P. value
	No	%	No	%	No	%		No	%	No	%	No	%	
Age														
60-69	22	55.00	30	46.88	4	66.67	0.527	18	90.00	30	88.24	8	57.14	0.021*
>70 yrs	18	45.00	34	53.13	2	33.33		2	10.00	4	11.76	6	42.86	
Sex:														
Female	34	85.00	64	100.00	6	100.00	0.004**	18	90.00	16	47.06	14	100.00	<0.001**
Male	6	15.00	0	0.00	0	0.00		2	10.00	18	52.94	0	0.00	
Education														
Illiterate	0	0.00	0	0.00	0	0.00	0.049*	12	60.00	16	47.06	8	57.14	0.684
Read and write	2	5.00	4	6.25	2	33.33		2	10.00	6	17.65	2	14.29	
Preparatory	12	30.00	10	15.63	0	0.00		4	20.00	4	11.76	2	14.29	
Secondary	14	35.00	18	28.13	2	33.33		2	10.00	4	11.76	2	14.29	
University education	12	30.00	32	50.00	2	33.33		0	0.00	4	11.76	0	0.00	
Residence														
Urban	34	85.00	58	90.63	6	100.00	0.454	5	25.00	9	26.47	6	42.86	0.461
Rural	6	15.00	6	9.38	0	0.00		15	75.00	25	73.53	8	57.14	
Marital Status														
Married	12	30.00	2	3.13	2	33.33	0.006**	10	50.00	30	88.24	6	42.86	0.001**
Widow	28	70.00	58	90.63	4	66.67		10	50.00	4	11.76	8	57.14	
Single	0	0.00	2	3.13	0	0.00		0	0.00	0	0.00	0	0.00	
Divorced	0	0.00	2	3.13	0	0.00		0	0.00	0	0.00	0	0.00	
Living condition														
Alone	6	15.00	6	9.38	0	0.00	0.454	12	60.00	8	23.53	6	42.86	0.027*
With family	34	85.00	58	90.63	6	100.00		8	40.00	26	76.47	8	57.14	

Table (5):- Correlation Co-efficient between Social Support scores with IADL and CCI

Correlations	Social Support scores			
	Geriatric clubs		Outpatient clinics	
	R	P	R	P
IADL	0.810**	<0.001**	0.494**	<0.001**
CCI	0.004**	0.963	0.110	0.386

***Statistically significant correlation at P. value <0.05.**

Discussion:

Stressful life events facing the older adults such as loss of a spouse or death of close friends, institutionalization or retirement that occur in late life can interrupt and change their social relations with the surrounding, given fewer social resources and less adequate social support, in both subjectively perceived support and the frequency of contact **Hajek et al., 2017**.

Social engagement encourages communication and participation in complex interpersonal exchanges and emotional support from family and friends, and it also increases social network size. Social networks help reduce physical health problems, psychological vulnerabilities and loneliness **Tomioka et al., 2016**.

This study aimed to examine the relationship between social support of older adults with IADL and its associated factors as personal characteristics and presence of comorbidities.

Regarding social support relation, more than one-tenth of the older adults in the geriatric clubs which the majority of them from urban area in the present study had strong social relation, while none of the older adults in the outpatients' clinics which most of them were from rural area had strong relation. This may be due to the services that the clubs can offer as several recreational activities and trips beside the nature and habits of people in the urban communities who share in social relation and family celebration.

The moderate level of comorbidity appeared by more than one quarters in the present study of both groups, while more than two thirds of geriatric clubs sample experience mild level of comorbidity, in **Tomioka et al., 2017b** the sample who experience more chronic disease had poor IADL and increased as they become older. This increase the tendency to sever comorbidity progression and affection of social contacts.

Normal changes due to advanced age, acute illness, progressive chronic illness, and several admissions to hospitals can contribute to a decline in the ability to perform tasks necessary to live independently in the community **Hajek et al., 2017**.

More than half of both studied groups need assistance in IADL, in addition more than one fifth of outpatient clinics sample were dependent in their IADL. Because of telephone calling and communication, driving and transportation, money management are important items of IADL, when the studied sample need assistance or they dependent in these activities as showed above, the result affect on calling or receiving calling and communication with others, transportation affect the visits of older adults to relatives, geriatric and recreational clubs or any social activities and these limit social activities for older adults and indicator for deterioration of social support among the studied sample.

In a study by **Dai et al., 2016** that conducted in Tainan Taiwan and Fuzhou Fujian Province observed by univariate analysis a significant difference between social support and the associated factors as age, sex, marital status, and living condition. Concerning age, the difference statistically significant as the higher scores of social support were among the sample whose age from 60-69 years in both groups, this was supported in **Dai et al., 2016**. It

may be due to increased frailty of older adults with advanced age and decline their relation with others.

Regarding sex, in the present study there was statistical significance difference regarding social support score and sex, this result was consistent with **Tomioka et al., 2017** who observed that differences according to sex in the association with social support. The higher scores were among female, It may be referring to the differences according to sex in risk factors for IADL loss, role expectations in housework- related activities (e.g., preparing meals and shopping); and social networking, which is the major advantage of social support. Also it may relate to the larger social connection that the female had rather than male from friends and relatives due to passing through different stressful situations.

James et al, 2011 had the same result who studied relation of late-life social activity with functional disability among community-dwelling older adults in the Chicago metropolitan area. This study also in line with **Takagi et al, 2013** who reported the same observation in the study of Social participation and mental health in Japan, while in **Kanamori et al, 2014** study indicated no significance about sex and social support**.**

Concerning education, the present study revealed statistical significant difference in both groups regarding relation between social support scores and education as the higher scores were among the sample with university education, it explained that sample with higher education may have more information and easily access to resources; more familiar with social services and social insurance, this was supported by **Dai et al., 2016**.

As regard to relation between social support scores and marital status, this study showed a significant statistical difference between them, the high scores were among the married sample in both groups, it appeared that the married older adults tend to perceive more social support that available to them and maintain larger social network than widow, single or divorced who may experience poor social support. This was in line with **Dai et al., 2016.** While other study by **Penning and Wu, 2014** who studied the social support among older adults in Canada that found no significance between them. In the study by **Hewitt et al., 2012** revealed moderate effect of marital status on social support.

The living condition of both sample in the two groups had a significant statistical difference regarding social support scores, the high scores among the sample who living with their families, this was consistent with **Dai et al., 2016.** It was explained that the older adults who living with their family receive strong social relation while those who living alone may be perceived themselves as vulnerable, absence of caregiver in their daily life make difficult for them to cope with incapacitating effects of the disease that can face the older adults.

The present study showed a statistical significant difference regarding IADL levels and the demographic data of both groups in age, sex, education and marital status. Female older adults need assistance in their IADL in around two thirds of geriatric clubs and around half of the outpatient clinics samples, **Tomioka et al., 2017a** supported that results when observed a significant difference between the sexes and age as women had a decline in IADL and increased decline in IADL with advanced age.

Conclusion

Older adults who attended geriatric clubs that they participate routinely in social contacts and activities had a strong social support and decreased level of IADL dependency. Increased IADL dependency among outpatient clinics sample. There was statistical significant correlation regarding social support of both groups and IADL and with comorbidity level in geriatric clubs group. There were a statistical significant difference regarding social support and their associated factors as age, sex, educational level and residence of the studied samples. There were a statistical significant difference regarding IADL levels and age, sex, educational level and marital status of both groups.

Recommendations:

- Development of policies to address the point of social relations and activities for older adults from formal, informal and institutional network.
- Health promotion programs regarding improvement of IADL with the consideration of importance of social network for older adults from their family, institutions and others to maintain independence.
- Aware and encourage the rural communities regarding the social support network issue in their lives.

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