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Self-Imposed Activity Limitation among Community-Dwelling Older Adults in Alexandria, Egypt

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Abstract: Nowadays, it has been proven that ageing is not considered as an obstacle for engagement in various activities. However, nurses have exerted constant efforts in order to enhance activity among older adults, the intrinsic processes linked to voluntary self-imposed activity limitation (SIAL) in old age represents a quite substantial issue. Nevertheless, SIAL phenomenon is little studied by researchers and inadequately understood among the physically and mentally capable aged people. This study aimed to explore self-imposed activity limitation of community-dwelling Olders Adults in Alexandria, Egypt. Settings: outpatient clinics of both Gamal Abdel-Nasser Hospital and Farouk hospital in Alexandria. Subjects: 200 eligible participants who were older adults, free from any physical illness or pain that may restrict their activity level. Tools: 16 tools were applied for data collection. Results of this study depicted that 50 % of the participants expressed that they had either low or high total SIAL and the low total SIAL were highly exhibited significantly among the subjects who had positive age perception, had high level of activity and wellbeing, as well as had low sense of control. Conclusion: Mainly factors that significantly associated with total SIAL were the elders' age, marital status, level of education, income and post-retirement working. Further significant associations were found between total SIAL and its inclusive intrinsic domains among this study subjects. Recommendations: it is recommended to recognize and capitalize on the significance of SIAL understanding for gerontological nurses in order to help older adults to achieve successful ageing by constant delineation and application of health promotion programs on regular basis for older adults to minimize their excessive SIAL and sustain their self-reliant living.

Key words: Older Adults · Activity Engagement · Self-Imposed Activity Limitation (SIAL)

INTRODUCTION

With advanced age, the ideal objective of successful ageing is actually growing older while maintaining vivacity. Therefore, the research in gerontological nursing has recently concentrated progressively on ageing process, as well as old people. Among the concerns is the issue of how elders can be successfully growing older whilst reducing morbidity and functional deterioration, rather than living with illness and disability burdens. Successful aging refers to "the continual adaptation to the changes of life, reducing the major risks of disease and disability, preserving both physical and mental functioning, communicating with others and vigorously engaging participating in life" [1, 2].

Fundamentally, proper physical, mental, spiritual and social activities are considered highly valuable for the older adults and quite crucial for successful aging. These activities can successfully minimize the threat of specific chronic illnesses, considerably alleviate depressive symptoms, appropriately sustain independent living and eventually promote the overall life quality [3, 4]. Definitely, participation in namely, physical and social activities is linked to an improved function and a slower turn down in the functional status with ageing [3, 5]. Nevertheless, the numbers of seniors who is physically active decreased with advanced age regardless of the obvious advantages and profits of these activities [6, 7]. Additionally, in USA, greater than one- half of the aged are not considered active on a regular basis [8]. Accordingly, activity limitation is deemed as among the most foremost civic health problems as well as among the most significant risk variables of chronic illness morbidity, functional deterioration and mortality among the seniors [9]. According to World Health Organization [10] activity limitation is discriminated from participation restriction,

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which represents a problem that persons would experience when life circumstances limiting their activities. In view of this, this discrepancy indicates that activity limitation is apparently internally experienced, rather than externally imposed. Activity limitation is not only a phenomenon that occurred commonly among the disabled older adults, but can also be appeared among community dwelling elders who do not have physical and mental disabilities [3, 11]. Approximately, one-half of the limited activities that is expressed by the older people is due to the voluntarily reduction of their customary behaviors [12].

Human development is considered not as a massive headway and escalation process; rather, it is deemed as a constant, interacting, varying and interrelated system of gains and losses. Actually, there are multiple aspects which affect the equilibrium between aging gains and losses [13]. There are four distinct agencies affecting individuals' health experience and developmental processes on the whole as well as exclusively; namely, ageing, hereditary components, outer agency (environment) and inner agency (personal function). In fact, it is quite complicated to prevent the existence of losses associated with ageing because of several factors such as the physical changes linked to aging and the widespread disclosure to environmental hazards. Consequently, seniors' inner personal functioning is regarded as the crucial amenable factor in the adaptive course of human development so as to retain and improve well-being [14]. SIAL is also deemed as among the internal functions that manage the effects of ageing process. On the whole, it is a unique molding process that affects the seniors' well-being; however, its negative unfavorable outcomes can be avoidable and eventually reversible. Undoubtedly, older adults may vary in their feelings, thoughts, reactions and behaviors, particularly when they facing challenges. Thus, they can be valuable, positive, energetic and affianced in life; otherwise, they can be lethargic, stationary, submissive and detached [15]. Basically, SIAL is interpreted on a scale extending from adaptive to maladaptive as well as outcomes extending from the level of well-being to disuse syndrome. Elders in adaptive behavior utilize compensation strategies which are an amendment process through which the functional outcomes of both the inner and outer losses and restrictions are reduced resulting in successful aging. Thus, seniors could survive a powerful living with various normative restraints. Conversely, maladaptive behavior caused by excessive utilization of SIAL may bring about senility which in turn leads to numerous negative health consequences such as elders' isolation from life [3, 12, 15 & 16].

Furthermore, SIAL is not only a socially implanted phenomenon but also it is an accumulating process of self-resilient, self-initiated and self-dogged limits on the intellectual, bodily, or social behaviors via an individual who has supremacy over a situation [14]. In fact, this process can be modified by numerous aspects within the sociocultural and personal spheres. Hence, SIAL modifiers within the sociocultural sphere may incorporate aging stereotypes, cultural prospects and public responsibilities [17, 18]. On the other hand, SIAL modifiers within the personal sphere may comprise aging process; demand to preserve energy; demand to prioritize behaviors; personality, earlier life experience; pain; and emotional status as anxiety and depression [12, 13, 17 & 18]. Moreover, SIAL is a new concept created from personal and occupational experiences in life and associated theories. Actually, it is a two-dimensional construct with manifold domains which are cognitive and behavioral. The cognitive dimension represents an elder’s preferences to use compensation. On the other hand, the behavioral dimension represents the elder’s participation in various social, physical and mental activities [13]. SIAL is primarily constructed to contain 6 main concepts: activity, self (age)-perception, well-being, sense of control, compensation strategies and depression. Both the cognitive and behavioral aspects of SIAL can act as a arbitrator among the elders' self-competence, their imagined self and well-being. The impacts of their self-competence and their imagined self on their well-being may be reconciled by the seniors' instinctive personal choice of their life objectives either deliberately or involuntarily. This is in addition to the paths seniors’ link their intellectual ability to their activities in the mental, physical and social domains [3, 12 & 15].

Reducing aging losses and deleterious functional outcomes of illness, as well as enhancing dynamic participation in life are regarded as the most fruitful and profitable health promotion strategies [19]. Definitely, gerontological nurses, through an effective comprehension of SIAL, can assist the older adults to promote or preserve their self-reliance. In addition, the conceptualization of SIAL endows nurses with a better comprehension of understudied aging SIAL phenomenon, as well as provides nurses with proper awareness of how older adults view different activities concerning their life priorities. Nevertheless, activity

limitations and a sedentary lifestyle pattern have been examined among the disabled seniors; however activity limitation among the physically and mentally capable older adults is considerably less explored. Admittedly, SIAL studies are also scarce in investigating such phenomenon. As well, very little is known regarding the effect of ageing process on both intrapersonal inducement and activities selection which are made by the community- dwelling older adults [1, 13, 15, 16 & 19]. In Egypt, no studies have been also conducted to explore attributes of SIAL phenomenon. Therefore, there is a need for scientific researches to examine self-imposed activity limitation among community dwelling older adults and its correlates.

Aim of the Study: The study aimed to explore self-imposed activity limitation among community–dwelling older adults in Alexandria, Egypt.

Research Questions:

- To what extent is the self-imposed activity limitation among the community-dwelling older adults in Alexandria, Egypt?
- What are the factors associated with self-imposed activity limitation among community-dwelling older adults in Alexandria, Egypt?

MATERIALS AND METHODS

Materials

Design: This study followed a descriptive correlational research design.

Settings: This study was conducted in Alexandria in two settings: The outpatient clinics of both the Health Insurance clinic (Gamal Abdel Nasser Hospital) and the Ophthalmology General Hospital (Farouk) affiliated to the Ministry of Health.

Subjects: The study subjects comprised 200 community-dwelling older adults who attended the above mentioned settings and fulfilling the following criteria: age 60 years old and above, free from physical illness or pain that limits their activity level and able to communicate effectively. The program Epi info 7 was used to estimate the sample size based on using 5% possible error and the confidence co-efficient 97% which revealed the minimum sample size to be 200 older adults.

Tools of Data Collection: Sixteen tools were used to collect the necessary data.

Tool I: Older Adults' Socio-Demographic and Clinical Data Structured Interview Schedule: This tool was developed by the researchers based on relevant literature to collect the following data; such as age, sex, marital status, educational level, occupation prior-retirement, current work status, financial status and available family/social and presence of medical illnesses.

Tool II: Physical Activity Scale: This scale was developed by Rossi *et al.* [20] to assess an elder's level of daily physical functioning. It consists of 4 questionnaire in which respondents were asked to what extent each of the statements described themselves by using a 6-point scale (1= Several times a week or more to 6= Never). Negatively stated items were reverse coded in analysis so higher scores reflected greater physical activity.

Tool III: Civic Obligation Scale: This scale was developed by Rossi *et al.* [20]. It consists of 4 questionnaires in which respondents were asked to rate how much obligation they would feel if the situation described in the item happened to them, using a 0 to 10 scale where 0 means "no obligation at all" to 10 means "a very great obligation". The scale was scored by calculating the sum.

Tool IV: Work Obligation Scale: This scale was developed by Rossi *et al.* [20]. It consists of 3 questionnaires in which respondents were asked to rate how much obligation they would feel if this particular situation would happen to them, using a 0 to 10 scale where 0 meant "no obligation at all" to 10 meant "a very great obligation." The scale was scored by calculating the sum.

Tool V: Altruism Scale: This scale was developed by Rossi *et al.* [20]. It consists of 4 questionnaires in which respondents were asked to rate how much obligation they would feel if the hypothetical situations happened to them, using a 0 to 10 scale where 0 means "no obligation at all" to 10 means "a very great obligation." The scale was scored by calculating the sum.

Tool VI: Psychological Wellbeing Scale: This scale was developed by Guo [15]. It consists of 4 questionnaires using a 7-point scale (1=strongly agree, 7=strongly

disagree) for the following four items. Answers of the respondents to the questions of the scale were categorized by the researchers into three points Likert scale instead of the 7-points Likert scale used by the tool developer Guo [15]. This modification was done as the seven points Likert scale is too detailed. Thus, answer of all negative statements were reversed in scoring and categorized into a three points Likert scale where one (1) indicates agree, two (2) indicates don not know and three(3) indicates disagree. It scored by calculating the sum. Negatively stated items were reverse coded so the higher score reflect higher psychological well-being.

Tool VII: Social Wellbeing Scale: This scale was developed by Guo [15] in order to measure an elder's appraisal of his/her circumstances and functioning in society. It consists of 6 questionnaires using a 1 to 5 scale where 1 means "A lot" to 5 means "Not at all". This scale scored by calculating the sum. All negatively stated items were reverse coded so the higher score reflect higher social wellbeing.

Tool VIII: Perceived Health Scale: This scale was developed by Rossi *et al*. [20]. It consists of 4 questionnaires in which respondents were asked about their perception regarding both physical and mental health using a 0 to 5 scale where 0 means "poor" to 5 means "Excellent". The scale was scored by calculating the sum.

Tool IX: Perceived Constraints Scale: This scale was developed by Lachman and Weaver [21]. It consists of 8 questionnaires in which respondents were asked to what extent believe there are obstacles or factors beyond one's control that interfere with reaching goals using a 7-point scale (1=strongly agree, 7=strongly disagree). Answers of the respondents to the questions of the scale were categorized by the researchers into three points Likert scale instead of the 7-points Likert scale used by the tool developer Lachman and Weaver [21]. This modification was done as the seven points Likert scale is too detailed. Thus, answer of all negative statements were reversed in scoring and categorized into a three points Likert scale where one (1) indicates agree, two (2) indicates don not know and three(3) indicates disagree. This scale was scored by calculating the sum and the higher the score the higher were the elder's perceived constraints.

Tool X: Health Self Efficacy Scale: This scale was developed by Guo [15]. It consists of 4 questionnaires in which respondents were asked to what extent each statement described them using a 7-point scale (1=strongly agree, 7=strongly disagree) for the following four items. For the sixth item, respondents were asked about how they would rate the amount of control they have over your health these days on an 11-point scale (0 = none to 10 = very much). Answers of the respondents to the questions of the scale were categorized by the researchers into three points Likert scale instead of the 7-points Likert scale used by the tool developer Guo [15]. This modification was done as the seven points Likert scale is too detailed. Thus, answers of statements were categorized into two points Likert scale where one (1) indicates agree, two (2) indicates disagree. This scale was scored by calculating the sum. Negatively stated items were recorded in analysis so higher scores reflect greater health self-efficacy.

Tool XI: Elder Personal Attributes Scale: This scale was developed by Rossi *et al.* [20].It consists of 6 items in which respondents were asked about what people in general are like in their sixties indicating six characteristics of people: (1) Calm and even-tempered, (2) Willing to learn, (3) Energetic, (4) Caring, (5) Wise and (6) Knowledgeable. Respondents were asked to rate how much they thought each of the characteristics describes most people in their sixties, using a scale from 0 to 10 (0= not at all, 10 = very much).

Tool XII: Elder Social Integrity and Capacity Scale: This scale was developed by Rossi *et al.* [20]. Originally this scale consists of 7 items in which respondents were asked about how would rate themselves in some specified situations in their sixties using an 11-point scale (0 = the worst possible you can imagine, 10 = the best possible you can imagine) regarding six domains: physical health, contribution to the welfare and well-being of others, marriage or close relationship, their relationship with their children, financial situation and their overall lives. This scale was scored by calculating the sum of all items. The higher the score the higher were the elder's perception of aging.

Tool XIII: Persistence with Goal Striving Scale: This scale was developed by Wrosch *et al.* [22]. It consists of 5 items in which respondents were asked to assess elders' perceived attainment of goals using a 4-point scale

(1=a lot, 4=not at all). Negatively stated items were recoded so higher scores reflected greater goal striving. This scale was scored by calculating the sum.

Tool XIV: Positive Reappraisals Scale: This scale was developed by Wrosch *et al.* [22]. It consists of 4 items in which respondents were asked to assess the extent to which an elder saw a positive side of a bad situation using a 4-point scale (1=a lot, 4=not at all). This scale was scored by calculating the sum. Negatively stated items were recoded so higher scores reflected greater goal striving.

Tool XV: Seeking Support Scale: This scale was developed by Wrosch *et al.* [22]. It consists of 3 items in which respondents were asked to assess the extent to which an elders seek support from others using a 4-point scale (1=a lot, 4=not at all). This scale was scored by calculating the sum. Negatively stated items were recoded so higher scores reflected greater use of seeking support.

Tool XVI: Depression Scale: This scale was developed by Rossi *et al.* [20] to assess an elder's level of depression. It consists of 7 questionnaires in which respondents were asked to what extent each of the statements described themselves using 0 to 1 scale where 0 means "disagree" to 1 means "agree". The higher the score, the higher were the elder's depression level.

Method:

- Official letters were issued from the Faculty of Nursing, Alexandria University and forwarded to the hospital responsible authority of Alexandria Health Insurance clinic (Gamal Abdel Nasser Hospital) and Alexandria Ophthalmology General Hospital (Farouk) to obtain their approval to carry out the study.
- The director of each of the setting was informed about the purpose of the study and time of data collection.
- Tool I (socio-demographic and clinical data structured interview schedule) was developed by the researchers after a thorough review of literature.
- Tools II to XVI were translated into Arabic language by the researchers and tested for validity and reliability. The content validity of the tools was tested by a jury of 7 experts in the related fields of Gerontological Nursing, Medical Surgical Nursing, Nursing Education, Community Health Nursing and Psychiatric and Mental Health Nursing. The required modifications were carried out accordingly.
- Tools II to XVI were tested for their reliability using test-retest reliability. The tools were applied on 20 elders from El Montaza Health Insurance outpatient clinics; they were not included in the study sample. These scales were applied again on the same older adults after two weeks. Tool II- tool XVI had reliabilities (r= 0.81, 0.78, 0.80, 0.75, 0.77, 0.87, 0.73 0.86, 0.82, 0.82, 0.84, 0.77, 0.78, 0.80, 0.93 respectively).
- A pilot study was carried out on five (5) older adults selected from El Montaza Health Insurance outpatient clinics to assess the applicability, clarity and feasibility of the study tools and to determine also the estimated time to finalize the study tools; they were not included in the study sample. Although, the researchers used a large number of tools, each tool composed of small number of questions that did not cause any burden for the studied older adults. In accordance with pilot study findings, the needed and appropriate modifications were done.
- The researchers used to attend the selected clinics from 9.00 am to 2 pm on all working days of the week i.e. from Saturday through Thursday to identify those fulfilling study criteria.
- Each study subject was interviewed individually by the researchers in the waiting area of the clinic while sitting comfortably. The researchers explained the purpose of the study in order to gain the elders' cooperation, the researchers considered the attention span, comfort and pace of the study subjects. The necessary data was collected; it took nearly 20-30 minutes to complete the sheets.
- Collection of data covered a period of 3 months from the beginning of January to the end of March 2015.

Ethical Considerations: An informed consent from older adults to participate in the study was obtained after explanation of the study purpose and its potential benefits. Privacy/ anonymity and confidentiality of the collected data were maintained.

Statistical Analysis: Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. Qualitative data were described using number and percent. Descriptive statistics as frequency, distribution, mean and standard deviation were used to describe different characteristics. The Chi-square test was used for testing relationship between categorical variables. The level of significance selected for this study was p value equal to or less than 0.05.

Scoring System: Elder's responses were calculated and the negative statements were reversed in scoring as follows 1 (agree) to 2 (disagree), as well as (1 a lot of times) to 4 (Never). The median percent score was calculated and the total score was classified into two categories these were mainly; low (less than median percent score) and high (equal to or greater than the median percent score).

RESULTS

Table (1) shows the socio-demographic characteristics and clinical data of the studied older adults. This table illustrates that 54.5% of the participants were males and the majority (89.5%) of them were aged 60 to less than 75years old with mean age (67.05± 5.26) years. Also, 68.5% of the study participants were married while 29.0% and 2.5% of them were widow and single respectively. Nearly similar percentages (37.5 and 34.0%) of the participants had university education and were illiterate respectively, whereas 25.0% of them had basic education. Insufficient income was prevailing among 68.5% of the studied elders. Nearly similar percentages (40.0 and 37.5%) of the participants as well were employees and unskilled workers before retirement respectively, while, 22.0% of them were housewives. Furthermore, the majority (85.5%) of the study subjects reported that they did not have any post-retirement work. Regarding the presence of medical illness, it was found that 22.5% of the study subjects reported that they did not have any chronic illness.

Table (2) portrays domains of self-imposed activity limitation of the studied older adults. This table illustrates that 56.0% of the study subjects reported that they had low sense of control level, while similar percentage (50.5%) of the studied sample reported that they had high self (age) perception and high activity level. Nearly similar percentages (52.5 and 51.5%) of older adults who participated in this study reported that they used high compensation strategies and had high wellbeing level respectively, whereas 63.0% of them reported that they had low level of depression.

Fig. (1) depicts the total self-imposed activity limitation level among the studied community dwelling older adults. It is obvious from this figure that equally distributed percentage (50.0%) of the studied older adults had (maladaptive) or low (adaptive) total self-imposed activity limitation.

Table (3) illustrates the relationship between the total self-imposed activity limitation and the socio-demographic characteristics of the studied older adults. The table indicates that 56.0% of males of the study participants reported low total SIAL compared to 44.0% of the studied females with no statistically significant difference. 93.0% of the studied older adults who aged 60 to less than 75 years also reported low total SIAL compared to 7.0% of them who aged 75 years and more with statistical significant difference (x=2.607, p= 0.051). As well, 82.0% of the married participants who were reported high total SIAL compared to 17.0% of them who were widow with statistical significant difference (x=18.252, p= 0.000). Moreover, 41.0% of the study subjects who were illiterate reported high total SIAL compared to 33.0% and 20.0% of them who had university and basic education respectively with statistical significant difference (x=9.534, p= 0.053). Conversely, 82.0% of the studied older adults who had insufficient income reported low total SIAL compared to 18.0% of them who had sufficient income with statistical significant difference (x=12.940, p= 0.000). Also, 93.0% of the older adults who participated in this study and did not have any postretirement work reported high total SIAL compared to 7.0% of them who have postretirement work with statistical significant difference (x=9.074, p= 0.002).

Table (4) represents the relationship between the total self-imposed activity limitation and its domains among the studied older adults. This table reveals that 82.0% of the studied participants who had low sense of control level, as well as high level of wellbeing reported low total SIAL level compared to 18.0% of them who had high sense of control level, as well as low level of wellbeing with statistical significant difference (x=54.870, p= <0.000, x=74.487, p= <0.000) respectively. As well, 75.0% of the study subjects who had high self (age) perception reported low total SIAL compared to 25.0% of them who had low self (age) perception with statistical significant difference (x=48.025, p= <0.000). Further, the low total SIAL was obviously observed among 53.0% of the studied elders who reported that they used high compensation strategies compared to 47.0% of them who reported they used low compensation strategies with no statistical significant difference. Moreover, 87.0% of the study subjects who had high level of activity reported low total SIAL compared to 13.0% of them who had low activity level either physical, or mental, or social activities with statistical significant difference (x=106.591, p= <0.000). Also, 65.0% of the study participants who had low level of depression reported low total SIAL compared to 35.0% of them who had high level of depression with no statistical significant difference.

Table 1: Socio-demographic characteristics and clinical data of the studied older adults

Socio-demographic characteristics	Frequency (n=200)	%
Sex		
Male	109	54.5
Female	91	45.5
Age (Years)		
60 to less than 75	179	89.5
75 and more	21	10.5
Mean ± SD	67.05±5.26 Years	
Marital status		
Married	137	68.5
Widow	58	29.0
Single	5	2.5
Level of education		
Illiterate /Read and write	68	34.0
Basic education	50	25.0
Secondary level	7	3.5
University /Post graduate	75	37.5
Income		
Enough	63	31.5
Not enough	137	68.5
Pre-retirement occupation		
Skillful workers	75	37.5
Employees	81	40.5
Housewives	44	22.0
Current working status		
Working	29	14.5
Non-working	171	85.5
Family support		
Alone	8	4.0
With family	192	96.0
Presence of medical illness		
No	45	22.5
Yes	155	77.5

Table 2: Domains of self-imposed activity limitation among the studied older adults

Domains of self-imposed activity limitation	Frequency (n=200)	%
Sense of control level		
Low	112	56.0
High	88	44.0
Self (age)perception		
Low (negative)	99	49.5
High (positive)	101	50.5
Use of compensation strategies		
Low	95	47.5
High	105	52.5
Activity level		
Low	99	49.5
High	101	50.5
Wellbeing level		
Low	97	48.5
High	103	51.5
Level of depression		
Low	126	63.0
High	74	37.0

Table 3: Relation between total self-imposed activity limitation and socio-demographic characteristics of the studied older adults

Socio-demographic characteristics of the studied older adults	Total self-imposed activity limitation (SIAL)						
	Low (Adaptive) n (100)		High (Maladaptive) n (100)		Total n (200)		
	No	%	No	%	No	%	Test of significance
Sex							
Male	56	56.0	53	53.0	109	54.5	X:0 .181
Female	44	44.0	47	47.0	91	45.5	P: 0.103
Age (Years)							
60 to less than 75	93	93.0	86	86.0	179	89.5	X:2.607
75 and more	7	7.0	14	14.0	21	10.5	*P:0.051
Marital status							
Married	55	55.0	82	82.0	137	68.5	X:18.252
Widow	41	41.0	17	17.0	58	29.0	P: <0.000
Single	4	4.0	1	1.0	5	2.5	
Level of education							
Illiterate	27	27.0	41	41.0	68	34.0	X:9.534
Basic education	30	30.0	20	20.0	50	25.0	*P:0.053
Secondary level	1	1.0	6	6.0	7	3.5	
University education	42	42.0	33	33.0	75	37.5	
Current working status							
Working	22	22.0	7	7.0	29	14.5	X: 9.074
Non-working	87	87.0	93	93.0	171	85.5	*P:0.002
Income							
Enough	18	18.0	45	45.0	63	31.5	X:16.893
Not enough	82	82.0	55	55.0	137	68.5	P: <0.000
Family support							
Alone	4	4.0	4	4.0	8	4.0	X:0.000
Live with family	96	96.0	96	96.0	192	96.0	P: 0.279

* Significance P ≤ 0.05

Table 4: Relation between total self-imposed activity limitation and its domains among the studied older adults

Domains of SIAL	Total SIAL of the studied older adults						
	Low (Adaptive) n (100)		High (Maladaptive) n (100)		Total n (200)		
	No	%	No	%	No	%	Test of significance
Sense of control level							
Low	82	82.0	30	30.0	112	56.0	X:54.870
High	18	18.0	70	70.0	88	44.0	*P:0.000
Self (age) perception							
Low	25	25.0	74	74.0	99	49.5	X:48.025
High	75	75.0	26	26.0	101	50.5	*P:0.000
Use of compensation strategies							
Low	47	47.0	48	48.0	95	47.5	X:.020
High	53	53.0	52	52.0	105	52.5	P:.111
Activity level							
Low	13	13.0	86	86.0	99	49.5	X:106.591
High	87	87.0	14	14.0	101	50.5	*P:0.000
Wellbeing level							
Low	18	18.0	79	79.0	97	48.5	X:74.487
High	82	82.0	21	21.0	103	51.5	*P:0.000
Level of depression							
Low	65	65.0	61	61.0	126	63.0	X:.343
High	35	35.0	39	39.0	74	37.0	P:.098

* Significance P ≤ 0.05

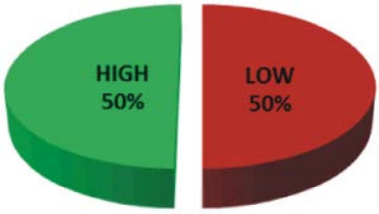

Fig. 1: Total SIAL of the studied community dwelling older adults

DISCUSSION

Activity limitation is fundamentally a multidimensional notion which encompasses physical, mental, social and spiritual domains. There are several factors that may cause activity limitation among older adults; for instance, environment, sedentary lifestyle pattern, illness and disabilities [14, 19]. Conversely, activity limitation can be noticed among elders who are free of physical and mental illnesses. In consequence of activity limitation, the older adults undergo unnecessary loss of self-reliance, functional deterioration and augmented illness burdens [17]. On the other hand, SIAL is differentiated from activity limitations that are enforced by further factors, for instance; illness or environment. SIAL is actually an interior personal process; however it is also a socially rooted phenomenon. There are several social and environmental variables that can change the inner process of SIAL. In addition, SIAL serves as an accumulating process which may be activated by alterations in the course of life like a fall or a fracture, loss of partner, loss of work (retirement). These life events may cause the seniors to review and re-evaluate of such situation [15, 19]. SIAL has presented an innovative perspective or outlook of successful aging and thus it contributes to gerontology literature. In fact not much is known about the core intrinsic process of successful aging in terms of its association with external effects. Accordingly, this study focuses on both the aspects of the aging process; cognition and performance. Therefore, this study aims to explore self-imposed activity limitation among community dwelling older adults in Alexandria, Egypt.

SIAL is identified as an individualized molding process where the elders base their own conscious or unconscious choices on the grounds of their evaluation, appraisal, or judgment of a situation. As a matter of fact, it comprises the behaviors imposed by force or by a recognized self- empower in order to restrict activities. In addition, older adults decide for themselves if or not they are capable of performing all spheres of physical, mental and social activities. Therefore, SIAL can range from adaptive to maladaptive behavior [15, 19, 23 & 24]. The present study proved that underlined hypothesis in this research where one half of the studied community dwelling older adults had either low (adaptive behavior) or high (maladaptive behavior) total self-imposed activity limitation as shown in (Figure 1). This finding may be attributed to several explanations. First of all, is that SIAL represents an expected phenomenon in our culture; engagement in performing the various fields of the everyday activities whether physical like doing exercises and practicing household activities or mental or social activities on a regular basis is not deemed as common behavior for most elders in Egyptian society. Secondly, over a third (nearly similar percentage) of the study participants were either illiterate or had university education in which education has a higher effect that enables the older adults to deal with their condition and survive the greatest probable life quality. Thirdly, two fifths (nearly similar percentage) of the studied older adults were either employees, or skilled workers before they retired in which occupation prior to retirement mostly influence the individual's level of functioning. All the reviewed studies were in agreement with this finding and it confirmed that the preservation of functional status basically strengthens older adults' ability to maintain their independence, while keeping their freedom to make choices in terms of their all domains and aspects of activities [3, 6, 10-12 & 15]. Dergance *et al.* [23], also concluded that absence of ‘‘self-discipline’’ represents a major obstacle to participation in physical and leisure activities among both European and Mexican American older adults. Additionally, Lennartsson and Silverstein [24] and Rosso *et al.* [25] stated and added that the principle reconciling factors which promote activity among seniors comprising; purposefulness, inspiration and internal direction among old people.

With advanced age, numerous mobility-related difficulties and problems increase. Thus, the negative aspect of the SIAL phenomena is expected to occur among people at particular stages when they encounter the challenges of late old age losses, compensate for such aging losses and re-appraisal their life objectives [15, 17]. Results of this study have confirmed this hypothesis and demonstrated that there is a significant association observed between total SIAL and advanced age as the majority of the participating elders aged 60 to less than 75 years have reported low total SIAL rather than these participants whose ages were 75 years and more, as

represented in (Table 3). These findings can be attributed to the fact that old age is usually associated with particular self-care restrictions, declined capability to do fundamental household duties, as well as loss of self-reliance which have an effect on the overall wellbeing. These findings were in accordance with those of Guo [15], Banks *et al*. [26], Yang and Wen [27]. Moreover, Reed *et al.* [28] documented that 43.0% of the people who are over 60 years of age in England are already self-report limitation in physical function while 13% reported difficulty with both self-care and mobility. These limitations contribute to the increase in expressions of depressive features, loneliness, low life satisfaction and life quality.

With regard to the gender of the studied older adults and total SIAL, the present study has revealed that greater than half of the male study participants reported low total SIAL in comparison to two fifths of the studied females with no statistically significant difference, as shown in (Table 3). This finding may attributed to the fact that most old men establish deeper and stronger purposefulness, motivation and inner direction to be accordingly more engaged in activities like volunteer roles in the community, sharing leisure time with family and friends and participating more in religious activities that would aid them to compensate and reduce ageing losses. However, older women are the main target for abusing and violence, have decreased physical vigor and more economically dependent. These findings are in line with Guo [15], Carmel and Bernstein [29] and yeom *et al*. [30] who concluded that the elder's self-esteem was a vital clarifying variable of activity limitation enforced by self for men (Beta=.118, p<.001) but not for women. Contrary to these findings, Rosso *and Taylor* [25], Yang *and Wen* [27] and Brown and Flood [31], who reported that overall moderate and severe mobility limitations enforced by the self attributes observed more in the female respondents than in the males.

Furthermore, this study has concluded that the majority of the married study participants have stated high total SIAL rather than the single or widow study subjects with a statistical significant difference as illustrated in (table 3). Indeed, this conclusion may be explained by that those who are single subjects may be more proactive regarding care arrangements and have developed better contingency plans. On the other hand, married elders get more of their informal care requirements, so they become more dependent on each other to the extent that they develop extreme excessive maladaptive SIAL behavior. These results were supported by Guo [15] and Henning-Smith and Shippee [32]. A study conducted in Brazil by Clares *et al.* [33] contradicted these findings and reported that older adults who have no partner are more likely to report a larger number of difficulties concerning the need to move.

In addition, education is considered as an exceptional cornerstone for the wellbeing of the elderly [34]. This current study has pointed out that there is a significant association between the level of education and total SIAL of studied older adults where around two fifths of the illiterate study subjects reported high total SIAL level in comparison with one third and one fifth who had university and basic education respectively with a statistical significant difference as shown in (Table 3). These results may be related to the fact that higher educated elders exhibit more coping mechanisms with many stressful situations throughout their lives and particular potentials for gaining diverse involvements in life than elders with less education. These findings were in agreement with Guo [15] and Holmes *et al*. [35] who concluded that those with less than school education have higher rates of physical limitations, poor health condition than those with a higher education.

Surprisingly, the present study claimed that the majority of the studied participants who had inadequate income reported low (adaptive) total SIAL rather than the participants who had sufficient income with statistical significant difference as illustrated in (Table 3). The proper explanation of this finding could be delineated by the fact that older adults who faced with multiple financial difficulties might become more dependent on their family members or others for financial support. This situation enforces them to use optimal coping mechanism to minimize that financial stress and fulfill their life needs. This is in opposition with Lachman and Weaver [21] who found that participants' lower income was associated with lower perceived mastery and higher perceived constraints as well as poorer health. Similarly, Yang and Wen [27], Lang *et al.* [36] and Brady [37] found a higher utilization of selection, optimization and compensation strategies in daily functioning among rich elders so as to attain adaptation to losses of aging.

Concerning postretirement work, the present study has noted that the majority of the older adults participating in this study who did not have any postretirement work reported high total SIAL rather than the participants who have postretirement work with statistical significant difference as shown in (Table 3). This conclusion can be attributed to the fact that being old is associated with negative-toned stereotypes linked

to "productive" roles' loss. Actually, older adults gradually accept such negative attitudes in portraying themselves. Consequently, their own self-view of worthlessness, uselessness and incompetence may lead to SIAL resulting in maladaptive consequences. This result congruent with Banks *et al.* [26] who documented that function in older life is affected by occupational class especially with people who got occupations after retirement. They have reported fewer difficulties concerning physical function than those who did not have any postretirement work. Moreover, Canizares and Jacob-Filho [38] concluded that the losses caused by withdrawal from customary work activities, with income reduction may be the principal functional impairment factors, evident in the implementation of sedentary inactive attitudes, which causes the person to be vulnerable and susceptible to activity limitation.

The other notable finding of this research is the positive significant association found between total SIAL and sense of control where the majority of the studied seniors who had low sense of control level reported low total SIAL (adaptive) rather than the seniors who had high sense of control level as illustrated in (Table 4). These findings were consistent with Cousins [39] who reported that; however older females were familiar with the expansive health profit of activities, their attitude regarding the threats were stronger. They had greater level of perceived threat and medical excuses to evade exercises which denoted lower sense of control among those older females. In addition, Kempen *et al.* [40] proved that sense of control is a crucial forecaster for balance to both physical and psychological performance among seniors. Similarly, Mcauley *et al.* [41], Lachman [42] and Reitzes and Mutran [43] also showed that higher perceived mastery and lower perceived constraints were positively correlated to improved activity level, greater acceptance to ageing losses and lesser depressive symptoms. Further, Guo [15] added that sense of control was indicated by older adult's perceived constraints in which seniors who perceived constraints had moderate, negative impacts on their utilization of compensation and functional health. These results are contradicted with Kunzmann *et al.* [44] who have indicated that older adults who have a lower sense of control reported that they have negative physical functioning , take fewer duties for their wellbeing and are less probably to participate in health protective actions. Moreover, Agrigoroaei and Lachman [45] and ward [46] added that seniors were not only reported that they have higher perceived constraints but also they have lower health control.

Recently, scientists have focused on the active character of the self, which conveys self by behaviors and activities. Activities are paths to authenticate, enhance and actualize the self. Fostering elder's age perception will improve their activity level and well-being [47, 48]. The findings of the present study proved that hypothesis and revealed that significant negative associations were found between low total SIAL (adaptive) and high positive age perception, high activity and wellbeing level as depicts in (Table 4). These findings might related to the negative effect of self-reappraisal of elders' attributes and capacity that boosted by negative age stereotypes. These results are in agreement with Levy *et al.* [47] who found that a significant positive relationship found between age perception and physical activity level. Similarly, Rothermund and Brandtstadter [48] explored that age stereotypes were correlated negatively with measures of functional health and life quality. Additionally, Guo [15] and Sargent-Cox *et al*. [49] confirmed that self-perception was indicated by seniors' ageing perception and added that age perception had a significant positive impacts on their overall activity and wellbeing level, utilize of lowering life goals, positive situations defiance and readiness to accomplish social tasks.

The optimal development throughout the life period relays on older adults' choice of life activities and compensation .Compensation is an adaptive and successful mediating framework to life's stressful situations and crucial to sustaining better health. The adaptive result of SIAL is accomplished throughout optimizing the best use of resources and compensating with diverse activities [15, 50]. The present study confirmed that hypothesis and revealed that low total SIAL (adaptive) was obviously observed among greater than one half of the studied elders who reported that they used high compensation strategies such as positively situations defiance, looking for support and lowering aspirations compared to greater than two fifths of them reported that they used low compensation strategies with no statistical significant difference as illustrated in (Table 4). The proper explanations for these findings were attributed to the fact that first, older adults have used to lower their ambition of expected outcomes, optimized the best use of their resources in order to achieve their goal with compensation. Second, elders tried to compensate for age-related losses by constant goal-determined; positive re-evaluation and lowering ambition that were essential for amending well-being with advanced age. These conclusions were consistent with Petrella and

Cress [51] who found that older adults compensated for losses in capability by changing the performance of duties to achieve everyday activities, particularly those in a preclinical disability phase. In addition to, Riediger *et al*. [52] found that seniors were better in the intensity of goal pursuits than younger ones when practicing physical exercises regularly. Further, Guo [15] concluded that compensation as a multifaceted factor had a great significant impact on well-being and moderate impacts on activity. The more the elders decreased their ambitions and required support, the more they were capable to certainly confront a situation, that result in improvement in activity and well-being level. Moreover, Wrosch *et al.* [53], Rozario *et al.* [54] and Yutsis *et al.* [55] confirmed that older adults adjusted to ageing related losses by decreasing aspiration and protecting their emotional and motivational resources by positive reappraisals. Contrary to these results, Gignac *et al.* [56] examined adaptive behaviors among community dwelling seniors diagnosed with osteoarthritis and found that the majority (66%) of non-compensation strategies as cutting down or restraining behaviors were among household activities (25%) and valued activities (hobbies and leisure pursuits). Lachman [42] also added the perspective of those seniors with low sense of control regarding age related losses is unlikely to utilize compensatory strategy, or to adjust with protective behavior.

Well-being is the vital purpose of individual activity. Diverse activities engagement is definitely the best indicator of successful aging. Activity has been defined in various categories; personal care activities; leisure activity; productive activity; and valued activities [15, 19]. Engaging in physical activities collectively in regular basis could be improved energy expenditure and sustained muscular vigor and thus, brought out prevention of certain chronic diseases [9]. On the other hand, engaging in social activities and social support are also crucial for successful ageing and had positive indirect impact on well-being through physical activity [15]. Hence, activity contributes to all domains of well-being; physically, mentally, psychologically and socially [15, 57]. This research proved that hypothesis and reported that there were significant negative associations found between low total SIAL (adaptive) and high overall activity and wellbeing level as shown in (Table 4). These conclusions might be explicated by the fact that different patterns of activity participation confer numerous positive well-being outcomes in later life. These findings are consistent with several studies [5, 6, 9, 15 & 58-60] which concluded that there was a positive relationship between of activity frequency and level of well-being and also reported that engaging in various activities indicate more successful aging among community dwelling elders. Moreover, Greenfield and Marks [59] found that older participants with numerous significant role-identity losses reported poor psychological well-being and also concluded that social engagement may be serves as arbitrator for older adults' functional status decline in which active participation in social activities like volunteer jobs had positive impacts on seniors' well-being.

Giving up of a variety of activities in later life has an independent effect on depressive symptoms even after controlling for health status and resources. The results of this study proved that hypothesis and reported that a negative association was observed between total SIAL and level of depression where nearly two thirds of this study subjects who had low level of depression reported low total SIAL (adaptive) compared to more than one third of them who had high level of depression with no statistical significant difference (Table 4). These findings are congruent with Guo [15], Monserud *et al*. [61], Zarit and Zarit [62] and Roh *et al.* [63] who concluded that depression had a significant adverse impact on overall different categories of activities for the studied community dwelling older adults.

Recognizing all over the intrinsic factors associated with the activity limitation imposed by self in older population will assist to determine strategies for the planning of nursing interventions and impactful actions. Throughout these strategies, the gerontological nurses should focus on older adults' needs and the implementation of public programs, in order to avoid disability, dependence on others and the endorsement of active aging.

CONCLUSION

Based on the results of the present study, it can be concluded that one half of the studied subjects reported low (adaptive) total self–imposed activity limitation, while the other half reported high (maladaptive) total self–imposed activity limitation. Those who had high total SIAL were aged 75 years and more, illiterate, married, had inadequate income and did not have post-retirement work with a statistically significant difference. Conversely, those who had low total SIAL, had low sense of control level, had high use of compensation strategies and high level of activity and wellbeing, with a significantly significant difference.

Recommendations: Based on the findings of the current study, it can be recommended that:

- Raise public awareness about the importance of adopting a holistic view of self-imposed activity limitation process through mass media and public programs. This strategy aims to break down stereotypes/ myths regarding older adults that underestimate elders' ability to participate fully in public activities either physical, or mental, or social activities.
- Design and implement health promotion programs for older adults by the gerontological nurses in order to minimize the negative functional consequences of disease and loss of aging and promote active engagement in life. The educational sessions should include knowledge and skills regarding the integration of health promotion activities such as exercise, coping with stressors into daily living routine.
- Inclusion of self-imposed activity limitation process and its major domains and indicators among older adults in gerontological nursing curriculum.
- Screening of older adults' physical, psychosocial functioning should be an integral part of the gerontological nurses' regular assessment and evaluation. This will help to identify functional problems and intervene as early as possible.

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