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Original Article

A comprehensive study on factors influencing self-care agency and daily life activities among the elderly people in China

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Abstract: Nowadays, the most important social and economic claims China faces, is the hasty aging of its citizens. China has a large aged population now, although it is still deemed as a middle-income country. Coupled with the fast erosion of family support and market-driven restructuring social services, the condition of accessible and affordable social care services to aged society has already turn into an vital concern for the Chinese government to address. The study aims to understand what aged Chinese citizens with chronic illness and their ancestor's caregivers perceive to be good care, and to evaluate point of views of those living in countryside and municipal areas. The total mean score of instrumental activities of daily living at the early days of care and discharge was found to be 2.12 and 2.80, correspondingly, disclosing a significant enhance of 2.12 ($t = 12.72$, $P < .001$). The inner reliability of the instrument was counted using Cronbach's Alpha with a ranging between 0.77 and 0.88, except for cognitive functioning ($\alpha = 0.49$) and emotional functioning ($\alpha = 0.64$). The results of multilevel regression models examining the association between total POSM-NF scores and covariates. A greater ADL Hierarchy Index was associated with a lower total POSM scores (parameter estimate: -.728, P = .04). Therefore, residents with impaired physical independence were more likely to report lower QoL. Among residents who reported depression, had lower total POSM score as well (parameter estimate: -3.015, P-.01). The association between nursing homecare's overall star rating and QoL was not significant (parameter estimate = 0.683; P = .12).

Keywords: Frail elderly, geriatrics, elder care, filial piety, China

Introduction

In more recent time, China is a super power politically as well as economically. Simultaneously, it holds the 2nd leading economy in the present world. Its per capita GDP (Gross Development Product) defines it as a middle-income country. Regardless of these notable achievements, socioeconomic development is still measured to be uneven. The Chinese folks have found themselves facing lofty threat of income shock or loss as a result of insecure employment, social dislocation, and poor social protection [1, 2].

In dementia research, Quality of life has become a very significant indicator particularly in long-term care facilities. There are noteworthy indications that numerous behavioural disturbances, cognitive impairment, and depressive symptoms are related to lesser the quality of life of Chinese people with dementia living at their own residence. On the other hand, what type of factors influenced the quality of life in long-term care settings are still unclear [3]. Among this rapidly aging population, the group of elders aged 80 and older, known as "*oldest old*", is the fastest growing and leading to an increasing demand for long-term care (LTC) services. However, increasing migration from rural to urban areas, especially among young people, and the shrinking average family size due to China's one-child policy have over whelmed traditional, informal family-based care giving model for older adults, especially the "*oldest old*" [4, 5].

Acute shortage, low quality and low levels of private and NGO involvement mark LTC services for older people in China. The policy directive to marketwise such services has been hindered by the underdevelopment of NGOs and for-profit organizations. As a result, except the very small number of *three nos* elderly, only those who can afford to pay very high fees can satisfy their LTC needs. All those in-between, which comprises the majority of older people in need, can either get limited, unstable, and low-quality services or have to pay a very high fees, or even both [4]. For self-governing life, Functional aptitude and capability for personal-care are of significance, both for those living in their personal homes and those in institutional care. SA (Self-care agency) expands in day by day life through self-learning. The development of SA can be affected by life experiences, different genetic factors, culture, various constitutional factors, and health state [6, 7]. There have numerous factors in the rehabilitation of aged persons distinguish it from the rehabilitation of immature adults. The most salient difference is the higher burden of co-morbid disease. Disability among aged persons is often multi factorial. It requires input from several professional disciplines to scrutinize and manage this medical issues and the rehabilitation needs [8].

In Shanghai and Beijing, Low income older people can collect cash vouchers in order to obtain dwelling care services from their neighbourhood community care package operators. These semi-governmental facility operators are solely liable for developing a dwelling care facility system by taking financial assistance from the city and district governments. In Shanghai, the voucher value is given considering particular needs assessment. Inadequate, low quality provision and the underprivileged monitoring of standards are the major challenges of long-term care services in China. Traditionally, the LTC facilities supplied in housing care settings are not standardized, formalized, or properly regulated. Professionally competent team members, for example nurses, personal care employees, and social employees, are quite knotty to find out, above all the aged person's home found in rural areas [4]. This extended lifespan of the population of china will create a number of aged related diseases and cause extreme transformations in the socio-economic structure of the society that will have a straight persuade on the health sector [9].

In this present study, we aim to recognize what aged Chinese citizens with chronic illness and their ancestor's care givers distinguish to be good care, and to appraise point of views of those living in rural areas and metropolitan areas.

Materials and methods

Setting and samples collection

An expediency sample of 100 patients who obtained dwelling healthcare services from a health care agency that is associated with a hospital in a metropolitan city was recruited. There have counted some additional criteria that were following:

(a) Patients were registered in a certified dwelling health care agency, (b) Had integral cognitive status, (c) Patients were 45 years old and older, (d) No mental disorder, and (d) had able to communicate with English.

G*Power program was used to calculate the analytical sample with alpha at .05, power (1-β) = .95 and an end product size of .35. The approximated sample size was 100.

Clinical outcomes

The clinical outcome of patients was measured in two times for example, at SoC and at discharge or after 60 days of service, either came earliest. Following that, clinical data were assessed by means of using 14 items from the OASIS that is elaborated as Outcome and Assessment Information Set, which included 8 items in ADLs and 6 items in IADLs. As the ADL signifies health status and ability for autonomous living, IADL expresses the instrumental sovereignty. ADL items were capability to grooming, dress upper body, bathing, dress lower body, ability to wash whole body, ambulation, transferring, feeding or eating and toileting. Among the IADL items were planning and preparing light meals, transportation, laundry, housekeeping, shopping, and ability to use telephone.

The particular items have signified by diverse scoring system. A value of 0 represents absolute sovereignty and is the best score possible in case of all ADLs and IADLs. In the present study, the specified Likert approach puts all of the individual ADLs and IADLs on the identical

Table 1. General demographical characteristics of the participants

Characteristics	Categories	N (%)	M (SD)
Age (years)	≤ 64	36 (36.00)	71.23 (14.29)
	65-74	28 (28.00)	
	75-84	24 (24.00)	
	≥ 85	12 (12.00)	
Gender	Male	35 (35.00)	
	Female	65 (65.00)	
Marital status	Single	30 (30.00)	
	Married	27 (27.00)	
	Divorced	25 (25.00)	
	Widowed	18 (18.00)	
Education status	≤ Fifth grade	5 (5.00)	
	Junior HG (high school)	7 (7.00)	
	HG	41 (41.00)	
	College	31 (31.00)	
	> College	16 (16.00)	
Yearly income	< USD 20,000	40 (40.00)	
	USD 20,000-30,000	10 (10.00)	
	USD 30,000-40,000	9 (9.00)	
	USD 40,000-50,000	9 (9.00)	
	> USD 50,000	20 (20.00)	
	Unknown	12 (12.00)	
Existing residence	Patient-owned as well as rented residence	80 (80.00)	
	Family member's residence	13 (13.00)	
	Board care as well as assisted living facility	4 (4.00)	
	Others	3 (3.00)	
Living arrangement	Single	44 (44.00)	
	With spouse or Significant other	29 (29.00)	
	With other family member	25 (25.00)	
	With a friend	2 (2.00)	
Payment source	Medical Aid	10 (10.00)	
	Medical Care	31 (31.00)	
	Private Insurance	25 (25.00)	
	Medical Care + Private Insurance	29 (29.00)	
	Others	5 (5.00)	
Primary Care-giver	Absent	20 (20.00)	
	Spouse or significant other	31 (31.00)	
	Son or Daughter	26 (26.00)	
	Any Other family member except son or daughter	12 (12.00)	
	Friend, neighbour, or any other community member like church	5 (5.00)	
	Remunerated help	6 (6.00)	
ICD-9 (International classification of diseases) code	Health services as well as after care	40 (40.00)	
	Respiratory diseases	17 (17.00)	
	Circulatory system diseases	14 (14.00)	
	Wound and toxins like fracture	11 (11.00)	
	Skin diseases, Symptoms, signs and ill-defined condition	9 (9.00)	
	Neoplasm	5 (5.00)	
	Nervous diseases	4 (4.00)	

Service duration (day)	≤ 20	38 (38.00)	30.35 (18.00)
	21-30	25 (25.00)	
	31-40	15 (15.00)	
	41-50	9 (9.00)	
	51-60	13 (13.00)	

scale, ranging from 0 to 1 following Scharpf and Madigan [10].

Statistical analysis

All reported *P* values were 2-tailed and results with *P* values less than .05 that deemed statistically noteworthy. Differences in characteristics between participating facilities were examined. Chi-square tests as well as one-way analysis of variance were conducted for residents' POSM-NF total scores by characteristics of facilities and residents. We used multivariate analysis by using total POSM-NF score as the outcome variable. Our multilevel regression models included both resident-level and facility-level data. Parameter estimates and *P* values for each level of covariate were calculated. Both forward and backward stepwise selections methods were used to ensure that the method used for selection of covariates had no impact on the final multilevel regression model. All statistical analysis was conducted through SPSS software (IBM SPSS Statistics for Windows, and Version 22.0. Armonk, NY: IBM Corp.).

Results

General characteristics of participants

The total participants were 100 and their mean age was 71.23 years (**Table 1**). Among them, 64% were over 60 years old. A significant amount of the participants were women (65%); they had minimum secondary school level education (41%). Among them, 80% people lived either their own houses or rented houses. The marital and living status of all participants was not same, only 27% were wedded but 30% single. Moreover, 44% of them lived alone but 29% lived with spouse or other. Their health care fees were managed by medicare (31%) and private insurance (25%) or by both (29%). The clinical features of participants were measured by OASIS items from the beginning day of care to 60 days or discharge (**Table 2**). The ASLs mean at start day was 5.85 but the mean of ALDs at discharge reached 7.16 with a significant increase of 1.21 ($t = 13.72$, $P < 0.01$). Where, the total mean score of IADLs found 2.54 and 4.07 at care start day and discharge day respectively.

According to the summation of the 8 ADL items, the result we found that 89% participants improved ADL but only 2% declined and the rest was natural (142.77, $P < 0.01$). In the case of ADL, the highest improvement was noticed in dress upper body (39%) then dress lower body (32%) and bathing (34%). Unit change is the change of score from start day of care to discharge, for example, if the score at start of care was 1 and then the score changes to 0 at discharge then it is considered 1 unit change. The noticeable improvement of ADL items was expressed by more than two units included bathing (33%) and dress lower body (20%) but 34-74% remained unchanged, and 0-2% of participants declined. The 76% of ambulation item was unchanged, 72% was toileting and 66% was transferring.

The participant's details PCO, age, gender and respiratory condition have in provided in **Table 3**. Three areas were gathered to encompass the subjects. (1) Recognizing the consideration toward oneself: the reasons why and in which routes members occupied with their own particular reflection and their view of weaknesses and preferences of offering obligation regarding administration of their condition; (2) the relationship within patients and experts and elements affecting on access and correspondence; and (3) part in moulding expert consideration of the patients. The freak cases were not noticed here. Beyond of doubt it was remarkable that how comparable the members' records, concerning thought toward oneself.

The upper score on the symptom scales and particular items specify a greater degree of symptomatology, where the global upper score for health status/QoL and the functional subscale symbolizes a better level of functioning.

Table 2. Assessment of ADL and IADL between SOC and discharge or 60 days (N = 100)

	Variables	Start of care Mean (SD)	Discharge Mean (SD)	Change Mean (SD)	t	P[a]	Unit change					χ^{2b}	P
							Enhancement (%)		Turn down (%)		Remain Unchanged (%)		
							Single unit	≥ double units	Single unit	≥ double units			
ADL	Cleaning	0.71 (0.14)	0.91 (0.12)	0.18 (0.20)	9.01	< .001	52	3	1	1	43	47.2	< .001
	Dress with upper body	0.71 (0.23)	0.94 (0.14)	0.26 (0.20)	12.61	< .001	57	3	1	0	39	55.00	< .001
	Dress with lower body	0.57 (0.27)	0.87 (0.20)	0.32 (0.21)	13.23	< .001	46	20	1	1	32	11.86	< .001
	Bathing	0.52 (0.31)	0.73 (0.22)	0.23 (0.26)	7.82	< .001	31	33	2	0	34	54.81	< .001
	Toileting	0.89 (0.13)	0.99 (0.14)	0.11 (0.16)	4.12	< .001	28	0	1	0	72	75.21	< .001
	Shifting	0.79 (0.12)	0.89 (0.10)	0.08 (0.13)	5.11	< .001	31	1	0	2	66	64.74	< .001
	Ambulation	0.80 (0.15)	0.82 (0.11)	0.07 (0.12)	5.32	< .001	23	0	1	0	76	82.04	< .001
	Eating or Feeding	0.86 (0.10)	0.97 (0.11)	0.08 (0.13)	9.21	< .001	47	0	0	0	53	1.00	.307
Total ADL		5.85 (1.26)	7.16 (1.04)	1.33 (1.02)	14.44	< .001		89%		2%	9%	142.77	< .001
IADL	Organize and able to plan light meals	0.48 (0.29)	0.84 (0.24)	0.32 (0.27)	10.87	< .001	57	8	0	2	33	59.26	< .001
	Transport	0.52 (0.12)	0.57 (0.17)	0.10 (0.18)	4.30	< .001	21	0	0	0	79	41.35	< .001
	Laundry	0.08 (0.18)	0.69 (0.35)	0.25 (0.32)	7.18	< .001	31	10	0	2	57	49.28	< .001
	Housekeeping	0.24 (0.31)	0.54 (0.34)	0.28 (0.35)	8.03	< .001	18	33	3	1	45	42.23	< .001
	Shopping	0.29 (0.22)	0.50 (0.26)	0.23 (0.21)	09.20	< .001	45	12	2	0	41	3.12	.071
	Telephone/Mobile	0.93 (0.15)	0.93 (0.09)	0.03 (0.10)	1.57	.094	3	5	1	1	90	149.92	< .001
Total IADL		2.54 (0.98)	4.07 (1.41)	1.21 (1.09)	13.72	< .001		90%		2 %	8 %	142.23	< .001

Footnotes: ADL: activities of daily living; IADL: instrumental activities of daily living; SoC: start of care. [a]*P* is computed by paired *t* test. [b]Accurate chi-square test for equivalent proportion among enhancement, turn down, and remain unchanged.

Table 3. Respondent specifications by age, sex and nature of condition

Age variety	Women	Men	Nature of condition	Sum of number
40-49	3	1	Asthma	4
50-59	3	3	Asthma, COPD and Asthma	6
60-69	2	11	COPD and Asthma, COPD, sarcoidosis, bronchiectasis, lung cancer	13
70-79	5	7	COPD, Asthma and COPD, sleep apnoea	12
80-89	1	2	Asthma	3
Total	14	24	Asthma, COPD, COPD and asthma, sleep apnoea, sarcoidosis, bronchiectasis, lung cancer	38

Table 4. Representation of QoL and ADL

Median IQR	Women (n = 65)	Men (n = 35)	Total (n = 100)	*P* value[a]	χ
World health status/QLQ[b]	61.26 (32.34)	64.72 (44.42)	67.76 (33.33)	0.930	0.77
Functional scale[c]	-	-	77.12	-	-
PF	63.13 (40.07)	71.32 (33.41)	73.33 (20.00)	0.126	0.82
RF	64.64 (53.52)	54.64 (40.03)	67.64 (64.62)	0.422	0.94
EF	66.65 (43.63)	81.43 (23.25)	73.03 (43.65)	0.053	0.64
CF	82.33 (20.33)	87.22 (26.63)	82.13 (26.63)	0.908	0.49
SF	100 (N)	100 (31.00)	100 (N)	0.344	0.97
Symptom scale[d]	-	-	40.09 (31.22)	-	-
FA	42.21 (52.52)	43.43 (43.00)	42.20 (24.00)	0.452	0.78
NV	N (24.32)	N (31.22)	5.42 (15.34)	0.434	0.79
PA	15.67 (53.10)	N (14.63)	12.27 (43.53)	0.319	0.88
DY	0.10 (31.33)	0.10 (63.17)	1.30 (66.67)	0.844	
Single item[e]	-	-	-	-	-
IN	16.52 (61.63)	1.02 (34.23)	N (54.27)	0.571	-
LoAP	N (32.21)	N (33.21)	N (32.32)	0.658	-
CO	N (33.12)	N (31.23)	N (33.53)	0.467	-
DI	N (33.32)	N (N)	N (33.63)	0.905	-
FD	N (N)	N (N)	N (N)	0.549	-
ADL[f]	-	-	-	-	-
IADL (4-12)	8.02 (6.20)	8.02 (5.20)	7.02 (5.20)	0.265	0.81
PADL (6-16)	7.02 (2.20)	6.00 (2.20)	7.23 (2.20)	0.307	0.85

Footnotes: QoL: Quality of life; ADL: activities of daily living; IQR: Interquartile Range IQR; PF: Physical function; RF: Role function; EF: Emotional function; CF: Cognitive function; SF: Social function; FA: Fatigue; NV: Nausea & vomiting; PA: Pain; DY: Dysponea; IN: Insomnia; LoAP: Loss of appetite; CO: Constipation; DI: Diarrhoea; FD: Financial difficulties; N: Nil. [a]Mann-Whitney U-test. [b]Upper scores represent high health-related quality of life. [c]Upper scores represent less problems. [d]Lesser scores represent less problems. [e]Lesser scores represent less problems. [f]Upper scores represent high dependence.

In **Table 4**, we have showed the internal reliability of the instrument, calculated by Cronbach's Alpha with a ranging between 0.77 and 0.88, except for cognitive functioning (α = 0.49) and emotional functioning (α = 0.64).

The average POSM-NF was 71.4 and SD 7.6, range from 45.1 to 93.0. In **Table 5**, the results of multilevel regression models examining the association between total POSM-NF scores and covariates are presented. The QoL of older adults were higher than younger adults; nevertheless, it was not significant (P = .08) statistically. Higher ADL Hierarchy Index was inversely related with a lower total POSM scores (parameters estimate: .728, P = .04). As a result, the residents, physically impaired independence were more probable to report lower QoL. The residents, who were reported depression, had lower total POSM score (parameter estimate: -3.015, P-.01). The alliance of nursing home care is good enough overly but QoL was not significant (parameters estimate = 0.683; P = .12), similarly, alliance between pain and QoL was not significant (parameter estimate = -0.705; P = .47). The evidence of multi co-linearity was not detected significantly and the inflation factors were less than 2.5 of all variance.

Discussion

Previous studies on the efficiency of home health care on stabilizing or improving patients' functional status are limited. The results we found were mixed; the confusing findings may be due to the different chronic diseases practised by home health care patients. Moreover, in these conditions patients experience habitually a downward trajectory. The home health care objectives aimed to inhibit the progress of disease and symptoms instate of recovering them.

Safe awareness is an important issue, though it is a long term practice of personal life but

Table 5. Multilevel regression of total POSM-NF scores

	Covariates	Parameter Estimate	*P* value
Facility level			
Facility characteristics	NHC's overall star rating (1-5)	0.623	.16
	Facility size (no. of certified beds)		
	Small (0-119)	0.834	.62
	Medium (120-149)	0.804	.53
	Large (150 or more)	Referent	-
	Profit status		
	Non-profit	0.517	.74
	For profit	Referent	-
Resident level			
Clinical characteristics	ADL Hierarchy Index (0-6)	0.762	.03
	Pain	0.234	.41
	Bladder incontinence	0.434	.65
	Fall	0.326	.73
	Depression	3.32	.03
	Cognitive Performance Scale (0-3)	0.254	.52

Footnote: ADL: Activities of daily living; NHC: nursing home compare; POSM-NF, participant outcomes and status measures-nursing facility.

safe-care activities can be highly significant. Assessment of coping skills, awareness of feelings, value clarification, awareness of thought and action patterns are the key areas that should take underscore [11]. In aged condition of health have great impact on daily life style in chronic conditions. Besides, cognitive changes and senility are the most important causes for long term disability in aged half [12]. Among residents of nursing home, pain bowel and bladder incontinence, dysfunction in balance and falls, depression, are common [13].

Loss of physical abilities increase physiologic and anatomic changes in aging period is a normal process and the person may become dependent on others at this time. This process is generally connected with a regular decline in respiratory, cardiovascular, gastrointestinal, hematologic, genitourinary, neurologic, sensorial, and endocrine system functions [14]. Due to increase lag time of neurons transmitting information and slowing manifests itself in the learning process, physical reactions are become slowly [15, 16].

Compared to finding of Skevington *et al*., the mean score of the physical domain at start of care was lower but the other domains mean scores were higher [17]; nonetheless, mean scores of all domains at 60 days or discharge were higher than start of care. Usually, the higher QoL found might be explained by income and health status of participants. There have a straight relationship between age and blood flow in heart with oxygen. The oxygen transported from heart to the blood stream and the rate of blood flow declines with age. The lung tissues appear to lose their facility for effectively allowing oxygen to transport into the blood stream, even if lung capacity stays normal. As aged persons cannot take breath properly like younger, so oxygen inflowing the blood decrease per minute [14, 15, 18]. Majority of old people complain about musculoskeletal changes, osteoporosis, osteoarthritis, rheumatoid arthritis, and pain related to fractures at a certain age [19].

According to a medical diagnosis, to diagnosis a patient accurately from a nursing perspective depending on that alone does not provide sufficient information. Nurses must recognize defining features of a nursing diagnosis during the assessment, such as impaired memory and dementia but medical diagnosis may be a related etiologic factor for a nursing diagnosis [18, 20]. Long term care services for aged people have emerged as source for the economically disadvantaged. Both residential and home care prerequisite are still extent, based on the service user's impoverishment or one's ability to pay market fees, instate of a judgment needs arising from functional impairment related to old people.

Conclusion

In conclusion it can say that the self-care ability (SCA) and SA reduced for the respondents of 75 years old or more. The SCA was calculated by three productive means for safe care, i.e. SA

(predicted by SCA and being dynamic), feeling energetic and energetic, the considered four risk factors were age, help, helplessness and communication ability. To enrich SCA among old people, valid judgement, physical activities maintenance and self-care activities are recommended. Self-awareness development throughout the assessment of managing skills, value clarification, and realization of thoughts feelings, and action patterns are also strongly suggested. In further studies the importance of such type of actions must be evaluated.

Disclosure of conflict of interest

None.

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