

Determinants of Elderly People’s Healthcare Management in Kumbakonam Town, Tamil Nadu India,

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Abstract:

Introduction: United Nations estimates that by 2025 the number of older people will double from the current 600 million to 1.2 billion. Of which 80 per cent will be in developing countries. The Indian aged population is currently the second largest in the world. The absolute number of the over 60 population in India will increase from 76 million in 2001 to 137 million by 2021. The functional ability of elderly people is crucial to how well they cope with activities of daily living, which in turn affects their quality of life.

Study Area: Kumbakonam town, Tamil Nadu State, India chosen as a study area.

Objective: To examine the interrelationships and interdependences of socio-economic, demographic, cultural, environmental, physiological, dietary behaviour and psychological determinants of elderly people aged above 58 years.

Sample: Random sampling procedure was used for the present study. There are 45 wards, 20 aged people from each wards aged above 58 years, totally 900 elderly people were selected and they are the respondents for this study.

Methodology: Factor Analysis was employed to bring out major dimensions and findings with the help of SPSS software package.

Conclusion: There were Six dimensions are extracted; mind-set, health status, family backdrop, personal habits, family support and health expenditure. These are the determining factors of elderly health of Kumbakonam town.

Key Words: Elderly health, Factor analysis, Determinants of health, Healthcare

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I. Introduction

United Nations estimates that by 2025 the number of older people will double from the current 600 million to 1.2 billion. Of which 80 per cent will be in developing countries. The Indian aged population is currently the second largest in the world. The absolute number of the population aged over 60 years in India will increase from 76 million in 2001 to 137 million by 2021. A primary survey (UNFPA 2011) was carried out in seven states – Himachal Pradesh, Kerala, Maharashtra, Odisha, Punjab, Tamil Nadu and West Bengal – having a higher percentage of population in the age group 60 years and above compared to the national average. The functional ability of elderly people is crucial to how well they cope with activities of daily living, which in turn affects their quality of life. Rising of socio-economic, cultural development and advancement of medical technology has been influenced on life expectancy of human beings. Aged persons are having health problems like hearing and vision decline, muscle strength diminishes, less flexibility of skin and blood vessels, and an overall decline of physique. Their body's organ performs insufficiently with advancing age. Intelligence were also diminishes with age. The social isolation that often exists among older people can dramatically influence mental attitudes and behaviour.

II. Review of Literature

The World Health Organization defines health is a person’s physical, psychological and social well-being. The determinants of health include not only biological endowment and individual behaviours but also physical and social environments (Beckingham; DuGas, 1993; Roemer, 1985). Indeed, the lack of social support, the decline in traditional caring by family members, environmental pollution, and deprived living conditions are the important factors contributing to poor health status of the elderly (World Health Organization, 1998). An international consensus statement saying that the physical activity depends on (Bouchard et al 1994)

six areas: body shape, bone strength, muscular strength, skeletal flexibility, motor fitness and metabolic fitness. The capacity of the human body is steadily declines with aged between 50 and 60. In a recent study indicates that the aged 65-74 years did not have sufficient muscle strength to lift 50% of their weight (Ashton 1993). These changes are the result of a reduction in the size and number of muscle cells. Cross-sectional studies have shown that stature and range of motion in the joints tend to decline with age (Schultz 1992). Health and functional ability, as well as socio-economic factors, influences the connections between physical activity and mental health (McAuley; Rudolph 1995; Clark 1996). In this situation, everyday actions, and life in general, become increasingly difficult (Heikkinen 1995). In India, National Sample Survey and the Census data highlight the urgency of the problems faced by the elderly (Gupta & Sankar, 2002; Gupta et. al., 2001; Visaria, 2001; Rajan et. al., 1999). The breakup of family and forced migrations has been paving the way for elderly to live alone (Rajan and Kumar, 2003).

III. Study Area

Kumbakonam Municipal Town is chosen as a study area and it is situated on the banks of river Cauvery and second biggest town in Thanjavur District. It is also called rice bowl of Tamil Nadu. This town consists of 7.86 square kilometres with the population of 33,800 in 1866. At present, the city covers an area of 12.58 square kilometres. It has been divided into 45 electoral wards with a population of 1, 67,098 in 2011.

Magnitude of the Present Study

The elderly are more vulnerable to disease because of decreased physiological reserves and defence mechanisms. Modern way of life creates many problems within and outside the family for elderly and they were not coping with the present day world. Elderly people were not able to lead their life individually that is why they wish to seeking help from their surroundings. They also thought that they were separated from the society without any recognition. Thus, the present study has deals with the healthy elderly adherence - a healthcare management approach in Kumbakonam town.

Aim and Objectives

The aim of the present study is to evaluate the healthy elderly adherence - a healthcare management approach in Kumbakonam town and it has the following objective:

To examine the interrelationships and interdependences of socio-economic, demographic, cultural, environmental, physiological, dietary behaviour and psychological determinants of elderly people aged above 58 years.

IV. Methodology

This present study is based on questionnaire survey by direct observation method. 900 respondents aged above 58 years have been selected based on Random sampling procedure. The questions related to socio-economic, cultural, demographic, anthropometric and psychological characters and also health status, health problems and healthcare utilization. The information collected through the questionnaire has been transformed into 74 selected variables and entered into SPSS for the application of statistical technique to find out the association. These variables are assumed to be the important factors which influence the health status of elderly people. Factor analysis was employed for the present data structure and accordingly a matrix of 900x74 was subjected to dimension reduction process. 22 out of 74 variables were extracted for the interpretation purpose of present study. So the data were reduced to 22x22 inter-correlation matrixes to facilitate for analysis. In addition to the above, the factor loading matrix was used to explain the power of association and the variance of each variable with all other variables.

V. Findings and Discussions

The application of factor analysis for the present study is very useful in separating the major dimensions of elderly health conditions. Six dimensions were extracted and contributing a total variance of 56.167 per cent. An Eigen value of 1.0 is taken as a cut-off point to determine the number of dimensions to be extracted. Correlation matrix revealed the presence of many coefficients of 0.4 and above. The Kaiser-Meyer-Olkin (KMO) value was 0.755, exceeding the recommended value of 0.6 and the Barlett's Test of Sphericity reached statistical significance (0.001), supporting the factorability of the correlation matrix. Principal components analysis revealed the presence of six components with Eigen values exceeding 1.0.

VI. Backgrounds of Elderly

Of the 900 elderly people 50 per cent male and 50 per cent female, 60.4 per cent are aged 58 to 68 years, 27.0 per cent are aged 69 to 78 years, 12.1 per cent are 79 to 89 years and remaining 0.5 per cent are aged up to the 103 years. The elderly are unmarried (2.0%), married (73.2%), widow (18.0%), widower (6.6%)

and divorced (0.2%). 82.4 per cent of the respondent's income were Rs.< 100,000, 14.2 per cent were 100,001 to 200,000, 2.6 per cent were 200,001 to 300,000 and 0.8 per cent were > 300,001. Their previous occupations have been as house wife/own work (35.4%), agriculture (1.4%), agricultural labour (1.0%), labour (41.3%), private job (6.9%), government job (8.3%) and business (5.6%).

At present, the elderly are economically depend on their daughter (6.4%), son (49.0%), husband/wife (17.2%), pension (8.8%), business (9.6%), aged pension (8.7%) and granddaughter (0.3%). 89.9 per cent are Hindus, 6.0 per cent are Muslims and 4.1 per cent are Christians. They are belongs to backward (63.6%), most backward (29.1%), scheduled caste (4.8%), scheduled tribe (0.4%) and other (2.1%) communities. Their educational status were elementary (46.2%), middle school (21.8%), high school (16.7%), higher secondary/diploma (2.6%), bachelor degree (1.1%), master degree (0.6%) and illiterate (11.1%). 72.6 per cent and 27.1 per cent of the aged people were have been living in own house and rented house respectively. Their house are thatched roof with mud wall (4.8%), thatched roof with red bricks (10.1%), tiled house with mud wall (3.4%), tiled house with red bricks (46.3%), thokuppu house (2.9%), single storey buildings (30.3%) multi storeys buildings (1.8%) and temple (0.3%).

Factor I: Mental Health

During the normal process of aging, older persons encounter mental health problems and stress. The first factor "Mental Health" has been emerged as a single most important factor with an Eigen value of 3.352 and the total variance of 15.235 per cent. Six out of twenty five variables are loaded on this factor. The variables feeling no one having affection (0.849), feeling no one respect by their ageing (0.794), hesitate to disclose health problems to their family members (0.777) problem for accompany to the hospital (0.749), feels family burden (0.629) and reasons for not caring (0.525) are highly correlated with the mental health status of aged people in Kumbakonam town. This is also evidently proving that 94.6 respondents are revealed that their family members are taking care and respecting them, in contrast 5.4 per cent are revealed that their kith and kin are dislike and not respecting them. Only 4.0 per cent of the respondents are conveyed that they reluctant to disclose their health problems to their family members, 5.4 per cent of the family members are not willing to accompany with the elders to the hospital and 3.9 per cent are feels that they are become family burden. However, they also understand that their kith and kin are unable (5.0%), no time (4.4%), no attitude (2.2%) and hating (1.2%) to take care. As a result, majority of the elder's mental health is satisfactory in Kumbakonam town with few exceptions.

Table-1 Factor Loading

Factor	Name of the Factor	Variable Number	Name of the Variable	Factor Loading
I	Mental Health	Py 3	Feeling no one having affection	0.849
		Py 2	Feeling no one respect by ageing	0.794
		Py 6	Hesitate to disclose health problems to family members	0.777
		Py 5	Problem for accompanying to hospital	0.749
		Py 10	Feels family burden	0.629
		Py 9	Reasons for not caring	0.525
II	Physiological Status	Ph 23	Can you do your work by yourself?	0.876
		Ph 22	Can you walk without other helps	0.855
		Ph 25	Can you do morning work by yourself	0.824
		Ph 11	Will you work without any physical strain?	0.433
III	Caring	Ph 10	Who care about your health?	0.712
		Se 7	Family Income From	0.708
		Py 12	Feels happy while playing with grandson/daughter	0.617
		Se16	Number of Son	-0.615
IV	Lifestyle	Pb 12	Do you have the habits of consuming Alcohol	0.911
		Pb 16	Smoking Behaviour	0.903
V	Family Environment	Fb 11	Eating together with family members at home	0.670
		Ph 26	Walking practise	0.666
		Ph 4	Present Health Conditions	0.562
VI	Health Expenditure	Ph 14	Health expenditure (Monthly)	0.673
		Ph 12	Physical problems/Diseases	0.666
		Ph 1	Weight	0.495

Factor II: Physiological Status

Aged persons are having declining of muscle strength, less flexibility of skin and blood vessels and an overall decline of physique. Their body's organ performs insufficiently with advancing age. The elderly "Physiological Problems" emerged as a second most important factor and it has four out of twenty two variables with an Eigen value of 2.537 and the total variance of 11.534 per cent. The variables can you do your work by yourself (0.876), walk without other helps (0.855), morning works (0.824) and working without any physical

strain (0.433). 95 per cent of the elderly respondents are revealed that they can work, walk and do their morning activities by themselves. In contrast, 30.7 per cent of the aged people are accepted that they have physical strain while doing some works. Hence, the present study clearly shows that the elder people's physiological statuses are good.

Table- 2 Rotated Component Matrix

Variable No.	I	II	III	IV	V	VI	Communalities
Py 3	0.849						0.733
Py 2	0.794						0.638
Py 6	0.777						0.627
Py 5	0.749						0.588
Py 10	0.629						0.406
Py 9	0.525						0.312
Ph 23		0.876					0.775
Ph 22		0.855					0.748
Ph 25		0.824					0.687
Ph 11		0.433					0.358
Ph 10			0.712				0.567
Se 7			0.708				0.532
Py 12			0.617				0.482
Se16			-0.615				0.453
Pb 12				0.911			0.837
Pb 16				0.903			0.825
Fb 11					0.670		0.496
Ph 26					0.666		0.492
Ph 4					0.562		0.457
Ph 14						0.673	0.486
Ph 12						0.666	0.521
Ph 1						0.495	0.336
Eigen Value	3.352	2.537	1.835	1.685	1.562	1.385	12.356
Percentage of Variance	15.235	11.534	8.343	7.660	7.098	6.297	
Cumulative Percentage	15.235	26.769	35.112	42.772	49.870	56.167	

Factor III: Caring

Young adults or kin and kith should considerate the elderly people. The "Caring" comes out as a third essential factor with an Eigen value of 1.835 and the total variance of 8.343 per cent. Three variables namely who care about your health (0.712), family income from (0.708), feels happy while playing with grandson/granddaughter (0.617) are positively loaded and one variable number of son (-0.615) is negatively loaded on this factor out of twenty two variables. This factor is undoubtedly explains that the elderly people's caring by their grandson/daughter (5.7%), son/daughter in-law (42.4%), daughter/son in-law (8.0%), husband/wife (25.6%), husband (7.2%) and no one (11.1%). The respondent's family incomes from their daughter (6.4%), son (49.0%), husband/wife (17.2%), pension (8.8%), business (9.6%), aged pension (8.7%) and granddaughter (0.3%). 71.2 per cent of the respondents are feels happy while playing with their grandson/granddaughter. However, the variable number of son is having negative relation with this factor because 16.6 per cent of the elderly are not having son, 34.4 per cent and 30.0 per cent are having only one and two son respectively, 13.6 per cent are having three son and remaining 5.4 per cent are having more than four children. Therefore, elderly caring is very satisfying when decreasing the number of son in Kumbakonam town.

Factor IV: Lifestyle

Lifestyle or personal behaviour is most important health indicator of social well being. So, the present study of elderly "Lifestyle" appears as a fourth factor with an Eigen value of 1.685 and the total variance of 7.660 per cent. The variable habits of consuming alcohol (0.911) and smoking behaviour (0.903) are positively loaded on this factor. This is evidently demonstrating that 88.9 per cent of the elderly are reported that they do not have the habits of consuming alcohol and 90.6 per cent do not have the smoking behaviour. Thus, this factor is indicating that the lifestyles of elderly are very cultured.

Factor V: Family Environment

Family environment is playing an important role in an individual health. The fifth factor "Family Environment" comes forward with an Eigen value of 1.562 and the total variance of 7.098 per cent. The variables eating together with family members (0.670), walking practise (0.666) and present health conditions (0.562) are positively loaded on this factor. Those who eating together with family members ($p=0.197$, $sig=0.001$) they have walking practise ($p=0.247$, $sig=0.001$) and their health conditions ($p=0.151$, $sig=0.001$)

are good. This is clearly indicating that these variables are having strong positive interrelationships with each other. Consequently, the respondents are also revealed that 43.4 per cent of the elderly people are eating together with family members, 32.2 per cent are doing walking practises and 60.1 per cent of the aged people health conditions are good. As a result, the elderly are healthy by their family environment.

Factor VI: Health Expenditure

Advancement of medical technologies made the life span of human being, to avail healthcare and utilization we should spend some amount of money based on the level of illness. The factor "Health Expenditure" emerged as last sixth factor with an Eigen value of 1.385 and the total variance of 6.297 per cent. The variables health expenditure (0.673), physical problem/disease (0.666) and weight (0.495) are positively correlated on this factor. Statistically, it is proved that the respondent's weight increases ($p=117$, $\text{sig}=0.001$) with an increase of physical problem/disease ($p=0.094$, $\text{sig}=0.005$) and this leads to an increases of health expenditure ($p=0.190$, $\text{sig}=0.001$). This is noticeably representing that there is strong interrelationship between the variables. Therefore, the health expenditure of aged people depends upon the type and prevalence of illness.

VII. Conclusion

This study shows that the elder's mental and physiological health was satisfactory with few exceptions. Caring by their kin and kith was very agreeable. The lifestyles of elderly are cultured and the health expenditure of aged people was depends upon the type and prevalence of illness. Hence, the elderly are adhere to their family, mental and physical health condition and they do suitable healthcare management practises.

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