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Editorial

Editor:

Dr Abdulrazak Abyad

Chief editor

This is the last issue this year - a year full with good quality papers. We would like to give special thanks for our readers, authors and above all the editorial board. In addition to a special thanks to our production team headed by Lesley Pocock, for their support and help.

A cross sectional study was carried out through December to March 2007 at Rumaillah hospital in Doha. The data was collected from 113 cases of stroke out of 163 stroke cases all of whom were above age 60 years old. The aim was to determine the prevalence of the major risk factors: (diabetes, hypertension, hyperlipidemia, and smoking) among elderly stroke patients. The results of this study showed that 80% from the total 113 stroke cases were hypertensive and 60% were diabetic while 3.5% were smokers. The authors concluded that hypertension is the most frequent determined risk factor among stroke patients followed by diabetes mellitus. The least determined risk factor was smoking.

A descriptive study from Jordan looked at Treatment of Post Herpetic Neuralgia with topical Lidocaine gel 2%. About 28 (60%) of the patients complain of lancinating pain, where 22 (79%) of them showed positive improvement, and 12 (25%) complain of burning pain where only 5 (41%) of them showed positive improvement, while 7 (15%) of them complained of other types of pain and 6 (86%) of them showed positive improvement. The authors concluded that Lidocaine gel 2% is an effective symptomatic treatment for post herpetic neuralgia especially for lancinating pain type.

A study from Nigeria describes three anthropometric measures (height, weight, and body mass index [BMI]) of elderly in Asaba, Delta state. Data on body weight, height and BMI was derived from 176 subjects. This study had 62.5% males and 37.5% females. Approximately 18.2% of them were aged 50-59 years, 43.8% (60-69 years), 29% (70-79 years) and only 9.1% aged 80 years or more. The authors revealed that the body weight, height and BMI of the elderly in Asaba, Nigeria declines with age, with higher magnitude before the age of 60 years and from 80 years.

A prospective clinical study from Jordan attempted to demonstrate the value of Daflon in the management of hemorrhoidal symptoms in Jordanian patients attending the Surgical clinic. The study was conducted over a 6-months period (December 2003 to May 2006). All were started on Daflon; 2 tablets twice daily for 4 weeks and were followed up weekly during the study period and proctoscopic examination was conducted at each consultation. The authors concluded that Daflon is a very safe and effective drug in the treatment of all hemorrhoidal symptoms in the population of the north of Jordan.

A paper from India investigated the patterns in disability prevalence among older persons and their health care seeking behavior and to see how they vary between the two selected states which vary in socioeconomic and demographic conditions. The authors looked at Data from 58th round of National Sample Survey (NSS) on disabled persons which was utilized in the study. The states in focus were Kerala, the state well advanced in health transition processes and Uttar Pradesh, the state lagging in these processes. The authors concluded that critical evidence that both the disability and health care utilization rates are on the rise among older persons. At the same time, substantial disparities are demonstrated in the pattern of disability prevalence and health care utilization among older persons by socio-demographic factors and between Kerala and Uttar Pradesh.

A paper from Iran looked at grandparents' health history. The portrait of older families or grandparents would also help younger generations how to plan their health so as to have healthy ageing in future. Similarly, the paper identifies quality of life of the ageing grandparents in association with their safety. The paper evaluates how social and economic conditions among the elderly are different from each other.

Safety and Quality of Life Among Grandparents in Tehran: A Sociological Study of Elder Grandparents in Iran

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ABSTRACT

The paper reflects grandparents' health history. The portrait of older families or grandparents would also help younger generations in how to plan their health so as to have healthy ageing in future. Similarly, the paper identifies quality of life of the ageing grandparents in association with their safety. A representation of the elderly's health disorders would help in projecting the illness and quality of life of those younger generations moving towards "third age". The paper evaluates how social and economic conditions among the elderly differ. Analysis of data on grandparents gives some qualitative and quantitative reflections and dimensions of these increasing populations of elderly people, not only in Tehran, but as a powerful screening tool for the entire Iran. The method of research used in this paper is empirical, preceded by theoretical and literature reviews. 452 families with grandparents have been referred to.

Keywords: Longevity. Retirement. Grandparents. Dementia. Quality of Life.

Introduction

As ageing and longevity are gradually increasing in Iran, the present study aims to find out about the health and socio-economic conditions of those people whom we call grandparents in this paper. Though there are very few sources and scientific documents on grandparents in Iran, the author is trying to create views and literature on the topic by collecting data and using relevant materials through referring to foreign resources. While the concept of "Third Age" was not very popular in the past, it has found its deep meaning during the twentieth century, in which industry and medicine have created miracles – leading to ageing and an increase in the number of grandparents.

While in the past grandparents were very influential over the youth, the social structure of the family was such that, almost every decision-making of the younger generations was directed by the authority of grandparents (*Asefi:1973*), yet, in the course of time, and due to a rise in educational status of children and youth, the authority of grandparents over offspring and grandchildren declined. The present work tries to reflect a perspective of grandparents with especial reference to their own lives, i.e. their safety and quality of life.

Increasing life expectancy everywhere including Iran means

that couples are likely to remain married for a longer time; letting them become grandparents. Under such conditions the number of grandparents is ever increasing with especial reference to larger cities wherein more health and medical facilities are available. Years of living together contributes to mutual understanding and companionship is likely to increase between old couples, or what is known in this paper as grandparents. By about age fifty, most couples have completed the task of raising children. From this age on, the couples gradually enter the period of grandparenthood. The remaining years of marriage – "the empty nest" brings a return to living with only one's spouse, and a decline in their socialization⁽¹⁾.

However, more adults in midlife are facing challenges of caring for their ageing parents or grandparents to their own children. Many families find that grandparents living to seventy and beyond require practical, emotional, and financial care that can be more complicated than raising their own children. Those born in the 1950s – now in their fifties, will spend as many years looking after their ageing parents, as they did caring for their own offspring (*Jarrett:1994*).

Retirement also brings a change to family life. If the spouse has been a homemaker, the husband's retirement means that spouses will spend much more time together. Although the

husband's presence is often a source of pleasure to both, more in the Western world, it sometimes undermines wives' established routines to the point of intrusion (Kalish 1982:96). In case of Iran, wives do not much welcome the retirement of husbands due to their ever presence at home, diminishing of family's income, intervention of husbands in daily family routines etc.

The most difficult transition in married life comes with the death of a spouse. Wives typically outlive their husbands because of women's longer life expectancy and because wives are usually younger than husbands to begin with. Wives can therefore expect to spend a significant period of their lives as widows. Loneliness accompanying the death of a spouse is always difficult. This experience may be even harder for grandfathers or widows, who usually have fewer friends than grandmothers or widows do, and may be unskilled at housework (Berardo: 1970).

In the present research, variables such as age, state of life, state of occupation, income, welfare, insurance, safety, education etc. have been investigated among the grandparents. They will be fully analyzed in a separate section.

Methods of Research

To do the research, the author first reviewed the necessary background literature and theories on ageing grandparents. In the theoretical section, relevant theories were searched, and the perspectives necessary were extracted, and used in the context. Similarly, in the empirical section as the backbone of the research, 452 questionnaires were administered through direct and face to face contacts with the respondents of 60 years of age and over, selected as random samples in various parts and neighbourhoods of Tehran city. The selected grandparents were interviewed too, in the course of referrals. Eventually, the questionnaires were edited, electronically extracted and tabulated in the form of designed tables.

Findings

In referral to families to find out about different characteristics of grandparents, the researcher could find 272 living grandfathers against 402 living grandmothers, i.e. a sex ratio of 68 males for every 100 females or grandmothers. Within those alive, 75% used to live together, while 25% of those elderly couples used to live with their offspring. In another question, the author came to know that 60% of the sample grandfathers lived alone, while 40% used to live with their offspring. In this question, 73% of grandmothers used to live alone, while 27% used to live with their offspring. Similarly, occupational status of grandfathers was as such: 27% were busy in jobs, 41% were pensioners, 1% had no pension at all, 7% were dependent on offspring and finally 24% were dependent on their own wealth. In this regard, only 2.75% of grandmothers were engaged in jobs, 35.78% were pensioners, 15.6% had no pension, 18.35% were dependent on their offspring and 27.52% were dependent on their own wealth.

Income being an important factor in old age, it was found that: 14% of grandfathers asserted they earned about \$US107 a month, 16.5% declared to have monthly income of about US \$US100 and 160. Those having a monthly income of \$US160 and 180 were 21%, grandfathers with a monthly income of \$US180 and 267 demonstrated 20.5%, and finally 28% declared to have an income above US \$ 268 a month. So far as

the grandmothers' income status is concerned, they declared their monthly income as such: 35.36% had income of less than \$US107 per month, 19% of grandmothers had an income of between \$US107 and 160, 15.22% had a monthly income of \$US160 and 180, 14.07% had a monthly income of \$US180 and 267, and finally 16.35% of grandmothers declared to have a monthly income of \$ US268 and above.

While insurance plays a determining role in the safety and security of the ageing grandparents, 82.72% of our sample grandfathers declared to have insurance and the rest of 17.28% declared not to be under any health insurance coverage. In a query regarding the health insurance of grandmothers, 84% had insurance, and 16% did not have it.

In another table prepared to find out about the health conditions of grandfathers the data collected were as follows: 36.03% were healthy, 11.75% had arthritis, 20.22% had some heart disease, 7% had diabetes, and 25% had other diseases. In case of grandmothers, 26.62% were healthy, 28.61% had arthritis, 12.94% had some heart diseases, 12.19% had diabetes, and 19.65 had other diseases.

Older generations are not quite as educated in Iran. Therefore, a perspective of the educational status of grandfathers could be reflected as follows: 26.84% uneducated, 30.88% had only primary education, 12.5% education of below ninth grade, 24.27% had finished secondary school or below, 1.84% had finished a diploma or college degree, 1.84% had a B.A./ B.Sc., and also 18.4% had a Master's degree or above. Educational reflections on grandmothers is a bit different from those of grandfathers. The Table concerning grandmothers states that 46.02% of them were illiterate, 30.6% had primary education, 6.47% had education of below ninth grade, 13.33% had finished secondary school or below, 2.24% had finished a diploma or a college degree, 1% had a B.A, B.Sc, and only 0.25% of the sample grandmothers had a Master's or above.

Classification of grandfathers according to their general feelings could be illustrated as such: 19.12% of our sample grandfathers declared to have loneliness feeling, 44.12% had impatience or moodlessness feelings, 7.72% had feelings of non-assistance or helplessness, 12.5% feared death, and finally 16.54% of grandfathers declared no remarks. In case of grandmothers, feeling of loneliness among them was 30.35%, impatience/moodlessness was 30.6%, feeling of non-assistance 14.43%, fear of death was 12.19%, and 12.44% declared no remarks.

Another table indicating grandfathers' status could be reflected as follows: 10.66% were in poverty, 29.41% were in social isolation, 30.15% suffered insecurity, and 29.78% gave no comments. Similarly, grandmother respondents were found, 9.2% in poverty, 25.87% in isolation, 35.82% in insecurity, and 29.1% with no comments.

In a question regarding the satisfaction of grandfathers, various reflections were found accordingly, i.e. 59.19% were satisfied with their lives, 18.75% were not satisfied with their lives, 8.82% expressed happiness, and finally 13.24% expressed grief. In case of grandmothers, 49.5% were satisfied with life, 16.17% were dissatisfied with their lives, 9.95% were happy, and 24.38% were grieved.

Similarly, attitudes of grandfathers towards different conditions were measured as such: 54.04% were satisfied with

their marriage, 6.25% were discontented with their marriage, 5.15% were satisfied with their income, 10.66% were discontented with their income, 11.03% of the grandfathers were satisfied with the environment/their surroundings, and finally 12.87% of the grandfathers were discontented with their environment. In terms of grandmothers, the data showed that 35.82% were satisfied with their marriage, 10.7% were discontented with their marriage, 3.48% were satisfied with their income, and 15.17% were discontented with that. Similarly, 15.17% of grandmothers studied were satisfied with their environment, and 19.65% were dissatisfied with it.

Other indicators pertaining to the way of life of the grandparents and approaches towards them in the family are reflected in a compact table as follows (Table 2)

Discussion

Grandparents can be of great help to their children. They can influence a family's adjustment, and often provide support to the entire family. They often provide many services for their grandchildren that their parents cannot fulfill. To be effective supporters, grandparents must first have their own needs and concerns responded to and addressed. They have the potentiality of being each other's best resources.

Grandparents not only in Iran, but in any other country could be the primary caregivers for millions of children, especially in modern times when many mothers work outside home. They could be increasingly of great help to the health and welfare of the "third generation". At a time when children are facing unprecedented stresses, and many parents are busy outside home, they could be a good reservoir of knowledge and parenting wisdom. Therefore, these great sources of advice and experience must well be protected.

To focus attention on the phenomenon, and provide grandparents with the recognition they deserve, the present research has been started. Grandparents provide a bridge between the last generation(s), and the new generation(s). They transfer old culture and values to the younger generation(s) through their care-giving, to contribute to their social mobility⁽²⁾. While they benefit their grandchildren, they are benefited by them too. Therefore, the youth must learn how to value grandparents in our society. Moreover, it must become a part of our culture, and part of the global culture as well. Similarly, grandparents can be updated more through contacts with grandchildren, and that prevents them from social exclusion⁽³⁾.

To promote national quality of life, a clean safe environment must be created; education and culture must be promoted, economic opportunities should be provided at all levels, and finally the youngest and the oldest (grandparents) must be respected, regardless of class, creed and race in a given society. However, environmentalism is a relatively new approach, which argues that the physical world is being harmed and this will increasingly impact on our grandparents' welfare. However, sociologists argue how environmental problems are linked to particular cultural values, economic arrangements and welfare of ageing grandparents (Cylke:1993).

Safety of grandparents depends on many factors such as providing social and health services to them, and also improving their social, physical and mental well-being. Though grandparents are usually of the age of retirement, yet, they may be activated to maintain secondary functions such as

giving care to their grandchildren in parent-absent homes, assisting each other (the two spouses), keeping their independence for longer time and so on. However, a century back or so, about half of children died before the age of twenty, and few could live to forty (Lenski & Lenski: 1995). Under such conditions the chance of having grandparents was very low.

With increase in longevity and life expectancy, the number and proportion of grandparents are increasing more than ever before. Under such conditions, social⁽⁴⁾ security in old age is vital. The baby-boomers of mid 20th century are gradually turning to 60-65, and adding to the number of grandparents in Iran. But, just as the physical problems of ageing, intellectual and psychological changes accompany ageing too. In short, we can state: "What goes up must come down" (Baltes and Shaie:1979). What they immediately need now is better income, more social security, and better coverage of health insurance. So, an increase in old age means more grandparents. The trend is likely to increase up to 2020 due to the high population growth rate of the 1960s. However, as the number and proportion of the elderly people increase, the healthcare system will experience an unprecedented influx of grandparents with physical and mental health problems, i.e. various age-related issues will make their care more complex, and necessary.

Not all the elderly grandparents are in a state of safety, some minorities face challenges associated with addiction, mental health problems, Alzheimer's disease, dementia etc. Similarly, prevalence of depression among them has increased in modern times. But, fortunately, as a result of advances in medical sciences, many old grandparents can be treated upon clinicians' diagnosis. That is largely possible in the industrial countries, and less practical in developing societies including Iran.

Recent studies demonstrate that many grandparents are afflicted by depression, hypertension, diabetes, heart failure and many other ailments that can be prevented, and in some cases treated, if means are available. What is more difficult with the elderly is mental disorders, which cannot easily be cured. However, despite all the advances taking place at different rates, and in different societies, many physicians are unlikely to recognize and diagnose mental health problems in older adults in the early stages of Alzheimer's disease. Also, if and when diagnosed, most elderly patients do not receive treatment. In the case of physical problems, fractures etc., physicians and clinicians feel more responsible and pay more attention to them than mental problems. So, in many cases, mental illness and ageing problems, which usually happen to grandparents are ignored in current times and in many societies.

Factors such as the age of grandparents, and whether they both are alive and living together, all contribute to the quality of life of grandparents in Iran. Similarly, occupational position of grandparents, their pensions, their "age⁽⁵⁾ and work" their, income and as a whole their economic position affects their quality of life, their health conditions etc. In Iran, not all grandparents hold insurance. Therefore, those who have it, can have a practically better and more immune life. Educational status of grandparents also narrows the gap between their grandchildren and them. Education has much played a role in increasing life expectancy, or so to say, it has contributed to having more grandparents, and in the future the num-

ber and proportion will be much higher (*Blundell: 2001*). But, unfortunately not all the grandparents are educated. While many grandparents are in need of help and emotional support of their children, or grandchildren, that often does not happen in the current complicated, socio-economic and cultural conditions.

Theoretical Perspectives

According to many economic demographers, an ageing population and increase in the number of grandparents leads to negative consequences in terms of growth of output per capita. A decreasing ratio of the working-age population to the total population contributes to the increases of the ratio of dependents (grandparents) to working people and the active members of families. This phenomenon is increasingly appearing in the contemporary world with special reference to the countries with longer life expectancy.

The theory of optimal life-cycle human capital investment that has been developed by *Bon-Porath (1967)*, *Mincer (1974)* and *Becker (1964)*, argues that rapid technological change in the form of education contributes to be almost exclusively concentrated at younger ages, poses challenges for rapidly ageing populations or grandparents. Hence, the relationship between age and human capital investment and consequent productivity growth cannot be seen in isolation from organizational and institutional factors. Under these circumstances the number of the grandparents is ever increasing, but, due to poor planning and controversial conditions, large numbers of ageing grandparents are not in healthy and quality conditions in Iran.

No economic theory provides a clear view as to how ageing affects productivity. Thus, health limitations tend to reduce employment opportunities of ageing grandparents. In response to lower earnings potential, older grandparents with health limitations are likely to reduce hours of work, and retire at earlier ages. Poor health also changes the grandparents' own assessment of the value of themselves. Yet, less is known about the relationship of grandparents' health and retirement in the rapidly ageing countries of Asia, including Iran.

Japan provides a good example of grandparents' health, retirement and so on. It has the most rapidly ageing population (grandparents) in the world, and currently has the highest proportion of people age 65 and older. In 1980, only 9.1% of the population of that country was aged 65 and older. By 2004, this percentage had increased to 19.5%, and current projections indicate that in 2025, about 31% of the Japanese population will be aged 65 and older. That is, about one-third of population will be grandparents (*Ogawa 2003*). Hence, many other countries will have larger numbers and proportions of grandparents in the years to come.

Another perspective emphasizes the consequences of demographic change for long time economic growth. *Anderson (2001)*, for example, estimates the effect of population ageing, and appearance of a larger number of grandparents, on average growth rate which is a downward trend. *Bloom and Williamson (1998)* add that the ratio of the non-working-age population (grandparents), to the working age population, between 1965 and 1995; suggesting that a baby-boom generation would create a wavelike pattern of real GDP per capita over time. Bloom and Williamson believe that as baby-boomers increase the head count immediately after birth, they reduce per

capita income, and the final incidence is on grandparents who are often pensioners.

It is well accepted that the future economic output in most industrialized countries must be achieved by a smaller and older labour force. A key question is how this development might affect labour productivity as measured by output per worker (*Blanchet 1992*). In the view of many economists, an ageing population or increasing grandparents has negative consequences for growth in output per capita. Therefore, countries with such population structures must search alternatives to respond to the shortage of their human labour force (15-64). However, though the number of grandparents is increasing, their economic conditions are at risk in countries like Iran. They are at present highly dependent on their offspring, and the scenario will be worse in the years to come.

Until recently grandparenthood has been a neglected area of study (*Cunningham-Burley 1986*). Academic interest has been much more widespread in the USA (*Begston and Robertson 1985*). Roles that have been identified are surrogate parent (*Victor:1994*). One matter of concern has been the lack of legal rights and obligations that parents have in relation to their grandchildren.

Upon the studies done, it was found out that grandmother was the second most frequent source of child-care for women in employment (*Martin and Roberts: 1984*). Large number of pre-school children of working mothers use grandmothers to look after these children during the absent-time of mothers. Almost the same amount of help and care are offered to school-aged children by grandmothers. However, this is a sort of exchange, i.e. while the daughter sees her visits as "keeping an eye on mum", mum may see the visits as the daughter turning to her for help and advice (*Harris:1969*). He stresses that to be on the receiving end in old age amounts to an abrupt reversal of the parental role.

Older people being the whole of a generation who have survived to a certain age, is the result of demographic changes in the population, i.e. the outcomes of longer life expectancies, lower birth rates, and an older average age of giving birth (*Becker 2004*). This scenario eventually leads to the phenomenon of grandparents. It has been recognized that such changes are likely to result in significant increases in elder abuse which includes grandparents too (*Ramsey-Klawnsnik 2000 and Voelker 2002*). Sociologically speaking, disproportionate increases in the number of dependent elders (Grandparents) relative to working-age individuals may result in higher stress levels among caregivers and increase abuse opportunities and thus may act to increase the rates of grandparents abuse.

Findings, and the literature on elder mistreatment, and misbehaviour with the elderly appears to emphasize dependency and stress as two of the most significant factors. For example, a positive relationship between abuse and stressful workplace environment has been emphasized in *Pillemer and Finkelhor (1989)*, and *Pillemer and Moor (1989)*. In many cases, the elder and grandparents' abuses are hidden, and as a normal and routine movement – depending on societies and cultures, poverty and affluence etc. For example, *Harrington et al. (2000)* found a positive relationship between nurse staffing hours and nursing home deficiencies. The specific mechanisms that lead to increased levels of abuse, neglect, and exploitation, are not clear; what is consistent among the studies is that, a decrease

in the qualified workforce is inversely related to abuse.

However, safety and quality of life of grandparents highly depends on health status and personality traits, and ethno-cultural backgrounds of those around such elderly people. Therefore, such people may abuse the elderly, or have good behaviour with them. In the present paper, we are unable to uncover all the dimensions regarding the grandparents' lives because of data limitations.

Conclusion

Figures indicate that the ageing people or so to say, grandparents are increasing in Iran. Personal characteristics of the elderly such as health status, personality traits, personal problems, and socio-economic backgrounds of grandparents are different in this paper. Therefore, grandparents represent different reflections. Similarly, different educational status, income conditions, work and health conditions of these elderly people prior to their retirement have given them a different quality of life in their old age as grandparents. Increase of grandparents in Iran to about seven times during fifty years (1956-2006) means that the elderly's needs have increased at higher proportions, and any failure or neglect towards that, will be elder abuse. In terms of norms and culture, the older grandparents rely on their children, and in that, grandmothers more rely on their daughters. Similarly, as residing in nursing homes is not common in Iran, the only alternative left for these people, is to be supported by their offspring and younger family members. In this paper we are unable to measure the quality of life of the elders any further due to resource and data limitations, which should be addressed in future studies.

Moreover, due to the current young population structure in Iran, the country will face a much higher number and proportion of elderly grandparents by 2030. As life expectancy is also increasing, we must logically expect more grandparents, especially women. However, issues such as social stigma and low status, employment and compulsory retirement, financial services and insurance, transport and medical treatment are highly problematic for the elder grandparents, less in Tehran and more in Iran as a whole.

Notes

1. Socialization: The term socialization means lifelong social experience by which individuals develop their human potential and learn patterns of their culture. This complex lifelong process builds up individual personality. Socialization does not happen much during old age. It forms an integral part of the quality of life of the individuals belonging to any society. It is difficult to socialize the elders and therefore, this leads to what is known as elder abuse.
2. Social mobility: It means movement up or down the class system. Unlike other systems of stratification, such as caste, class position is not determined for life at birth — people can move up and down. But, age limit can prevent or cut this mobility. During the twentieth century, upward mobility was much more common than downward mobility.
3. Social exclusion: This term is not very easy to define. Social exclusion is about the ways that people, and the elderly are cut off from the mainstream of life in the rest of society. It covers, among other things, poor health, poor housing, poor access to medical treatment etc. Central

to the attack on social exclusion is welfare to work, provision of basic needs, pensions to the ageing people or grandparents, providing people with work and income to be independent to support themselves.

4. Security in old age: In the past, one reason people had children was to make sure there was someone to look after them when they got old. In the West, this has become less important because more people have pensions and money saved or invested for retirement. Many older people still rely on their children, and especially on daughters. This affects women more than men, because women are less likely to have occupational pensions. In Iran, grandparents rely more on their sons for material support.
5. Age and work: Older people can face ageism; that is, they can be discriminated against because of their age. For those looking for new jobs in their 40s or 50s, age can count against them. Skills learned as a young adult may become out of date. Ageism is based on negative stereotypes of older people and grandparents. Many cultures value the experience and wisdom of older people who are looked up to as "elders". In modern societies, however, the pace of change has been so quick that some of the experiences of older people and grandparents are seen as irrelevant.

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Table 1: Comparative Profile of Number and Proportion of “Potential” Grandparents 65 and over in Iran and Tehran City Between 1956 and 2006

Iran				Tehran			
Year	Population	(Potential) Grand- parents	% Total	Year	Population	(Potential) Grand- parents	% Total
1956	18954704	758670	4.0	1956	1560434	52013	3.3
1966	25788722	993045	3.8	1966	2719730	81295	3.0
1976	33708744	1186470	3.5	1976	4536264	14829	3.3
1986	49445010	1493382	3.0	1986	6010075	203062	3.4
1996	60055488	2587437	4.3	1996	6758845	320430	4.6
2006	70472846	5130000	7.3	2006	7803883	464638	6.0

Source: Results of the Decennial Population and Housing Censuses of Iran 1956-2006

Table 2: Multi-indicator Perspective of Grandparents in Tehran in 2006

The way grandparents are approached in the family					
	100%	With justice	With affection	With discrimination	
Grandfathers		34.19%	52.94%	12.87%	
Grandmothers	100%	16.42%	68.66%	14.93%	
The way the ideas/experiences of grandparents are used in the family					
	100%	Use of ideas	Non-use of ideas		
Grandfathers		69.85%	30.15%		
Grandmothers	100%	61.69%	38.31%		
Safety and psycho-mental dependency of grandparents					
	100%	Visiting relatives	Visiting friends	Visiting offspring	None
Grandfathers		26.47%	10.66%	49.26%	13.6%
Grandmothers	100%	27.61%	6.47%	59.45%	6.47%
Safety dependency of grandparents					
	100%	Adequate income	Care by offspring	Care by nurse	
Grandfathers		42.65%	55.88%	1.47%	
Grandmothers	100%	27.61%	70.15%	2.24%	
Priority of grandparents' lives					
	100%	Living alone	Living in birth place	Living with spouse	Living with offspring
Grandfathers		6.99%	22.06%	54.04%	16.91%
Grandmothers	100%	10.45%	14.18%	41.29%	34.08%
Grandfather dead and state of life of grandmother					
	100%	Living alone	Living with offspring		
Grandfathers		72.78%	27.22%		
Grandmothers	100%	60%	40%		

*Original Contribution/Clinical Investigation***Prevalence of the Risk Factors among Elderly Stroke Patients at Rumailah Hospital; HMC, in Doha, 2007**

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ABSTRACT

Objective: This study was carried out to determine the prevalence of the major risk factors: (diabetes, hypertension, hyperlipidemia, and smoking) among elderly stroke patients.

Methodology: This is a cross sectional study which was carried out through December to March 2007 at Rumailah hospital in Doha. The data was collected from 113 cases of stroke out of 163 stroke cases. All study cases were above age 60. A formulated study sheet was used.

Results: The results of this study showed that 80% of the total 113 stroke cases were hypertensive and 60% were diabetic while 3.5% were smokers. There was no statistical significance between stroke risk factors and gender or nationality.

Conclusion: Hypertension is the most frequent determined risk factor among stroke patients followed by diabetes mellitus. The least determined risk factor was smoking. There are no significant associations between stroke risk factors and gender or nationality.

Introduction

A stroke is a clinical condition characterized by a sudden focal neurological deficit or acute neurological impairment caused by the interruption of blood flow to a specific region of the brain. This leads to an abnormal brain function causing disability, including paralysis as well as speech and emotional problems. Stroke can be classified into: ischaemic stroke, hemorrhagic stroke, and transient ischaemic attacks. Ischaemic stroke is the most common type that occurs, and happens due to blood clots or narrowing of the brain supplying arteries.^(1,2)

Stroke constitutes a major global challenge for health policy and healthcare economics; annually 15 million people worldwide suffer a stroke. Of these, 5 million die and another 5 million are left permanently disabled, placing a burden on family and community. Globally, stroke is the second leading cause of death.^(3,4)

WHO estimated that in 2005 stroke accounted for 5.7 million deaths worldwide. In developed countries stroke is the third leading cause of death and the leading cause of disability. More than half a million people experience a new or recurrent stroke each year.^(3,4)

In Qatar, stroke is one of the most common causes of disabilities. There is inadequate data about stroke. In 2003, 12

deaths were encountered due to stroke in the country.⁽⁵⁾

Risk factors of stroke include two major forms: modifiable factors such as high blood pressure, abnormal blood lipids, tobacco use, physical inactivity, diabetes mellitus, unhealthy diet, and atrial fibrillation. On the other hand; non-modifiable factors include advanced age, heredity factors or family history, gender, and ethnicity or race.^(6,7)

Worldwide there are some preventive programs planned and implemented in order to achieve their mission to reduce premature death and disability from stroke among the elderly, targeting people at risk for stroke, including persons with high blood pressure, high cholesterol, and multiple risk factors, as well as persons with prior stroke. Interventions with these populations directly address Healthy People 2010 objectives for stroke.

In Qatar, a hospital-based study was conducted to determine the types and the 30-day fatality rate of stroke. First-ever stroke was found in 217 patients (157 men and 60 women). The overall incidence rate was 41 per 100,000 inhabitants per year (95% CI, 30.2-52.4/100,000/year) and 238/100,000/year for the population over 45 years old. The age standardized incidence was 57.5 per 100,000 inhabitants per year (95% CI, 43.1-73.8). The crude incidence for native Qataris was 75 per 100,000 inhabitants per year. The mean age of patients

experiencing their first stroke was 57 years. Thirty-nine (18%) patients were younger than 45 years. Clinical subtypes of stroke were ischemic (80%), intracerebral hemorrhage (19%), and subarachnoid hemorrhage (1%). Risk factors included hypertension (63%), diabetes mellitus (42%), ischemic heart disease (17%), and atrial fibrillation (4.5%). The overall patient fatality rate at 30 days was 16%.⁽⁸⁾

Stroke incidence in Qatar is lower than in other countries; a low incidence of subarachnoid hemorrhage was noted. The low mean age of stroke patients reflects the demographic characteristics of the population in Qatar. The high percentage of stroke patients suffering from hypertension and diabetes reflects the high prevalence of these risk factors in the population.⁽⁸⁾

To my knowledge there is no such preventive program for stroke in Qatar and there were limited studies assessing risk factors for stroke and to plan and implement preventive program for stroke, thus the risk factors for stroke in Qatar must be identified and controlled.

Aim of the Study:

To study stroke risk factors in Qatar and to recommend better control programs toward them.

Objective of the Study:

To determine the prevalence of the major risk factors: (diabetes, hypertension, hyperlipidemia, and smoking) among elderly stroke patients in Doha in 2007.

Methodology

Study Design: This study is a cross sectional study.

Study Setting: The study was conducted in Rumaillah Hospital in Doha-Qatar. Qatar is a small country with an area of 11,427 sq. km, population of 7,24,125 and is densely populated at the capital city of Doha. Rumaillah Hospital is a hospital that delivers the highest quality of specialized acute, rehabilitative and long-term care services through comprehensive and holistic care continuum to patients including stroke patients.

Study Population: Elderly patients diagnosed as having stroke at different clinical settings in Rumaillah Hospital: inpatient, outpatient, and home care departments.

Case Definitions

- Stroke patients: include all cases diagnosed by clinical & neurological examination according to the following clinical setting: neurological weakness, incoordination, or visual losses confirmed by Computed Tomography (CT) scan or Magnetic Resonance Imaging (MRI)
- Elderly: include individuals who are 60 years of age and older according to the American Institutional Health Department.

Variables of the Study:

Exposure:

- a. Major modifiable risk factors:
 - High blood pressure
 - Abnormal blood lipids
 - Tobacco use
 - Physical inactivity

- Obesity
 - Unhealthy diets
 - Diabetes mellitus
- b. Other modifiable risk factors:
 - Low socioeconomic status (SES)
 - Mental ill-health
 - Psychosocial stress
 - Alcohol use
 - Use of certain medication
 - Lipoprotein(a)
 - Left ventricular hypertrophy (LVH)
 - c. Non-modifiable risk factors
 - Advancing age
 - Heredity or family history
 - Gender
 - Ethnicity or race
 - d. Novel risk factors
 - Excess homocysteine in blood
 - Inflammation
 - Abnormal blood coagulation

Outcome: Stroke

Data Collection Tools:

A study sheet was formulated for data collection and included:

- a. Demographic data: age, sex, nationality, socioeconomic status, and health card number.
- b. Medical history:
 - Time of diagnosis of stroke
 - Method used for diagnosis
 - Associated medical problems and the date of their diagnosis including risk factors: (Diabetes, hypertension, and hyperlipidemia).
 - Date of diagnosis of medical problems
 - History of smoking, amount, and duration.
- c. Family history of stroke

Data Collection Technique:

- Primary Source: Person to person interview.
 1. Member of household or close relative
 2. Caregiver
- Secondary Source: Data was abstracted from patients' medical records to confirm the information.

Sample size:

Sample Size was calculated to be 113 cases.

Sampling Technique: Simple random sampling.

Data Entry and Analysis: Collected data was coded and entered to the Statistical Package of Social Science (SPSS) of software, then analyzed by suitable statistical tests:

- Central tendency measures, and measures of dispersion when appropriate
- Chi square and t test

Ethical Consideration:

- Approval was taken from the research committee

- Permission from board of Rumaillah Hospital to go through the medical records of patients.
- Verbal consent from the patients if conscious, or relatives.
- Confidentiality of data was assured.

Results

Of the total 163 elderly stroke patients registered in Rumaillah hospital, 113 patients were randomly allocated in the study according to the calculated sample size. The mean age of stroke patients included in the study was 76.40 ± 7.96 years. The study showed that there was no significant association between gender and nationality ($P=0.49$) as well as between age and gender ($P>0.05$) among stroke patients.

Table 1 presents demographic characteristics of stroke patients included in the study. It was noticed that the frequency of males and females was approximately the same with approximate ratio of 1:1. More than 80% of the stroke patients were Qatari.

Figure 1 demonstrates the frequency of the major risk factors; diabetes mellitus (DM), hypertension (HTN), hyperlipidemia, and smoking among stroke cases. HTN was the most frequent determined risk factor among stroke cases constituting more than 80%. DM ranked as the second risk factor that had frequency of more than 60% among stroke patients. On the other hand smoking was the least frequent risk factor constituting 3.5%.

Table 2 presents the association between different risk factors of stroke and gender which showed p-value >0.05 with no significant association except for smoking that had borderline significance of $p=0.05$ for males.

Table 3 showed no significant difference of the risk factors frequency between Qatari and Non-Qatari patients with stroke. P-value was estimated to be ≥ 0.05 with no statistical significance.

Discussion

The present cross-sectional study represents the frequency of the major risk factors (HTN, DM, hyperlipidemia, and smoking) of stroke among stroke patients, which will serve to guide the health authorities in stroke prevention.

Different risk factors among stroke patients were measured. Hypertension was considered as the most frequent risk factor (81.4%) followed by diabetes mellitus (61.9%), family history of stroke (15.9%), hyperlipidemia (8.8%) and finally history of smoking (3.5%), which was considered as the least frequent risk factor among stroke patients. These results are consistent with a previous hospital-based retrospective study of stroke and risk factors in Jordan that included 200 patients with first-ever ischemic stroke admitted to hospital between 2000 and 2001. The study found that the most common risk factor was HTN (76%) followed by DM (44%).⁽⁹⁾ Also it is consistent with a case-control study that was conducted in China to identify the risk factors in Chinese with non-valvular atrial fibrillation and stroke, of these stroke patients (71%) had hypertension which were the majority and (17.9%) had diabetes.⁽¹⁰⁾ The present study results were also consistent with results in the retrospective cohort study done in UK in which data were collected for 813 new referrals of stroke and cardiovascular disease over a period of six months and found that the most common risk factors in patients referred were

hypertension (52.9%). In the same study, on the other hand, smoking was found to be (31.7%) higher than the results in our study, which could be contributed to the higher prevalence of smoking behavior in the UK.⁽¹¹⁾ Conversely in some other studies the data were not consistent with the results of ours. A previous retrospective cohort study was done in Qatar in 1999 to 2003 for 377 patients in order to find the association between stroke and acute myocardial infarction and to assess related risk factors such as diabetes, hypertension, and atrial fibrillation. This study concluded that 46.4% of stroke patients were diabetic and 28.9% were hypertensive.⁽¹²⁾ This difference from our study may be contributed to difference in the mean age of subjects included in their study (54.9 ± 12.5 years) while in the present study the stroke patients were (76.40 ± 7.96 years). Another reason may be due to the site of that other study which was conducted among patients hospitalized in Hammed General hospital while the present study was conducted in patients registered in Rumaillah hospital. Another study which was not consistent with ours was a retrospective clinical series study done in Nepal over 2 years including patients with stroke who were with a mean age of 61 years to study their risk factors. It found 61% smokers, 60% hypertensive, 8% had atrial fibrillation, and 8% were diabetic.⁽¹³⁾ These differences in the results may be explained by several reasons; as smoking is more prevalent among males than females in Qatar or may contribute to inadequate data in our medical files. Also it may be due to different lifestyles in the different countries.

There were no significant associations found between stroke risk factors and gender or nationality, this may be explained by the fact that stroke risk factors contributed to the sedentary life style regardless of nationality or gender.

Limitations of the Study

- Temporal relationship cannot be confirmed in this type of study
- Sample size calculation may necessitate a larger number of cases than the already existing ones in the Rumaillah hospital, hence we may have to include all cases of stroke in the hospital.
- Information bias may occur due to incomplete or wrong information from patients' relatives or medical records

Conclusion and Recommendations

From this study it is clear that hypertension is the most frequent determined risk factor among stroke patients, followed by diabetes mellitus. The least determined risk factor was smoking. There were no significant associations between stroke risk factors and gender and nationality. This suggests the necessity of planning and implementation of strong control and preventive programs addressing the major stroke risk factors in Qatar.

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Table 1. Demographic Characteristics of Stroke Patients in Rumaillah Hospital

Demographic Characteristics	Frequency (n=113)	Percent (%)
Gender		
Male	60	53.1
Female	53	46.9
Total	113	100.0
Nationality		
Qatari	93	82.3
Non-Qatari	20	17.7
Total	113	100.0

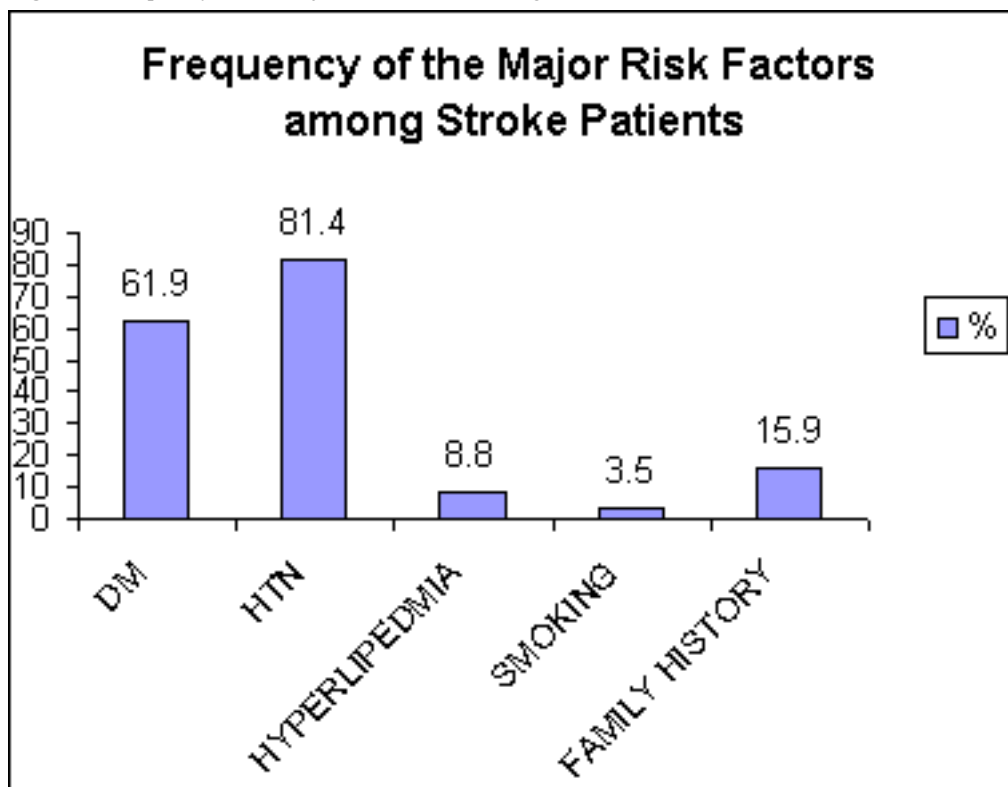
Table 2. Association between the Major Risk Factors of Stroke and Gender

Risk Factors	Gender				Significant (p-value)*
	Male		Female		
	No.	(%)	No.	(%)	
DM	35	50.0%	35	50.0%	0.4
HTN	49	53.3%	43	46.7%	0.9
Hyperlipedemia	7	70.0%	3	30.0%	0.26
Smoking	4	100.0%	0	0.0%	0.05
Family History	9	50.0%	9	50.0%	0.7

* p value for χ^2 **Table 3.** Association between the Major Stroke Risk Factors and Gender

Risk Factors	Nationality				Significant (p-value)*
	Qatari		Non-Qatari		
	No.	(%)	No.	(%)	
DM	60	85.7%	10	14.3%	0.2
HTN	74	80.4%	18	19.6%	0.27
Hyperlipedemia	7	70.0%	3	30.0%	0.28
Smoking	2	50.0%	2	50.0%	0.08
Family History	17	94.4%	1	5.6%	0.1

Figure 1. Frequency of the Major Risk Factors among Stroke Patients



Review Articles

Treatment of Post Herpetic Neuralgia with Topical Lidocaine gel 2%

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ABSTRACT

Objective: to determine the impact of topical lidocaine gel 2% on pain qualities associated with post herpetic neuralgia.

Method: This descriptive study was conducted in Princes Hashem and Queen Alia Hospitals from 1st of July 2007 to 31 of August 2008. A total numbers of 47 patients were included in the study. Male to female ratio was (5:1), age was between 28-65 years with a median of 48 years, and all fitted the criteria of post herpetic neuralgia with moderate to severe pain. All applied Lidocaine gel 2% to the affected area four times daily for two weeks and follow up was done during this period and two weeks after starting the therapy. To assess Improvement of the pain, direct questions were asked of the patient. What type of pain do you have? Did you feel a good improvement of your pain?

Results: About 28 (60%) of the patients complained of lancinating pain, where 22 (79%) showed positive improvement, and 12 (25%) complained of burning pain where only 5 (41%) showed positive improvement, while 7 (15%) complained of other types of pain and 6 (86%) showed positive improvement. The overall positive improvement occurred in 70% (33 of 47 patients) within two weeks; while 30% (14 of 47 patients) showed no improvement.

Conclusion: Lidocaine gel 2% is an effective symptomatic treatment for post herpetic neuralgia especially for lancinating pain type.

Key words: lancinating pain, lidocaine gel, post herpetic neuralgia

Introduction

Post Herpetic Neuralgia (PHN) is defined as pain that persists more than three months after an individual has experienced shingles, a viral infection also known as Herpes Zoster. The condition affects the nerves and skin, and the pain can burn, ache, or resemble an electric-shock feeling.^(1,2)

About 15% of people who have had chickenpox (almost everyone) develop zoster sometime during their life, and about 10% of people with zoster develop neuralgia. In older adults, as many as 50% develop neuralgia after zoster, one or more months after the rash.

Many modalities are used to treat PHN. These include topical therapy as Lidocaine patches 5% or capsaicin and oral therapy as Tricyclic antidepressants or Anticonvulsants with variable improvement.

We designed our study to determine the impact of topical lidocaine gel 2% on pain qualities associated with PHN.

Methods

This descriptive study was conducted at Princes Hashem and Queen Alia Hospitals from 1st of July 2007 to 31 of August 2008.

A total number of 47 patients were included in the study, and male to female ratio was (5:1). Age was between 28-65 years with a median of 48 years.

All fitted the criteria of PHN (pain that persists more than three months after an individual has experienced zoster and disappearance of rash or any pain occurring after healing of herpes zoster) with moderate to severe pain. Analyses for the type of pain were done and patients categorized to have lancinating pain, burning pain or other types of pain. Two of the patients were on Aspirin therapy for ischemic heart

disease and three were on non steroidal anti-inflammatory drugs for osteoarthritis

All applied Lidocaine gel 2% to the affected area after three months from the onset of herpes zoster infection four times daily for two weeks and follow up was done during this period and two weeks after starting the therapy. To assess improvement of the pain direct questions were asked of the patient.

What type of pain do you have?

Did you feel a good improvement of your pain?

Results

Of the 47 patients who were involved in our study, 28 (60%) of the patients complained of lancinating pain, where 22 (79%) showed positive improvement, and 12 (25%) complained of burning pain where only 5 (41%) showed positive improvement, while 7 (15%) complained of other types of pain and 6 (86%) showed positive improvement. While from those patients only 0.06% (3 of 47 patients) showed skin irritation and 0.04% (2 of 47 patients) were non-compliant.

So 70 % (33) of the patients felt a positive improvement within two weeks; while 30% (14) of the patients showed no improvement in general; and this is shown (Table 1).

The calculated value of chi-square is 6.26 and the calculated p-value is <0.05 which is statistically significant in our study.

Discussion

Post herpetic neuralgia (PHN) is the commonest and most intractable sequel of zoster and defined as persistence or recurrence of pain after 3 months from the onset of zoster. Its severity increases with age.⁽³⁾

The pain has two main forms: a continuous burning pain with hyperesthesia and a spasmodic shooting type.⁽⁴⁾

PHN is generally a self-limited disease. Symptoms tend to abate over time. Less than 25% of patients still experience pain at six months after the herpes zoster eruption, and fewer than 0.05% has pain at one year.⁽⁵⁾

A lot of modalities were used to treat PHN, which includes topical agents like capsaicin cream and oral, like tricyclic anti-depressants (Table 2).⁽⁵⁾

No single best treatment for PHN is known. Tricyclic antidepressants, topical capsaicin, gabapentin, and oxycodone are effective for alleviating PHN.⁽⁶⁾

Lidocaine is a local anesthetic agent used to relieve pain associated with shingles and post herpetic neuralgia with good tolerability.⁽⁷⁾ However with neuropathic pain some studies suggest to use local anesthesia for both acute and chronic pain which works by suppressing activity of spontaneously active fibers in neuromas,⁽⁸⁾ depresses c afferent fibre evoked activity in the spinal cord⁽⁹⁾ and silence dorsal root ganglion discharge without blocking nerve conduction.⁽¹⁰⁾

Lidocaine preparations are also sometimes used. Lidocaine gel 2% has been studied and shown to have good results with no side effects⁽¹¹⁾

Lidocaine patch an effective local anesthetic can reduce both pain and allodynia in a large proportion of PHN.⁽¹²⁾ Patients can apply up to four large patches around the affected nerve not more than 12 hours but side effects like redness or swelling to application site sometimes occur. So because of its minimal risk of systemic adverse effects or drug-drug interactions and proven efficacy, the lidocaine patch 5% has been recommended as a first-line therapy for the treatment of the neuropathic pain of PHN.⁽¹³⁾

In our study we used lidocaine gel 2% as a symptomatic treatment of PHN and our results showed that it is a good treatment for post herpetic neuralgia especially lancinating (shooting) pain with 70% improvement within two weeks, and with less side effects (skin irritation 0.06%) and cost than Lidocaine patch 5% and can be easily spread all over the affected area.

Conclusion

Lidocaine gel 2% is a good symptomatic treatment for PHN and we recommend it especially for lancinating pain type; where skin test is needed to exclude skin allergy.

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Table 1 results of data analysis

No. of patients Type of pain	Positive improvement	Negative improvement	total
lancinating	22 (79%)	6 (21%)	28
burning	5 (41%)	7 (58%)	12
others	6 (86%)	1 (14%)	7
total	33 (70%)	14 (30%)	47

Table 2 Treatment Options for Post herpetic Neuralgia

Medication	Dosage
Topical agents	
Capsaicin cream (Zostrix)	Apply to affected area three to five times daily.
Lidocaine (Lidocaine) patch	Apply to affected area every 4 to 12 hours as needed.
Tricyclic antidepressants	
Amitriptyline (Elavil)	0 to 25 mg orally at bedtime; increase dosage by 25 mg every 2 to 4 weeks until response is adequate, or to maximum dosage of 150 mg per day.
Nortriptyline (Pamelor)	0 to 25 mg orally at bedtime; increase dosage by 25 mg every 2 to 4 weeks until response is adequate, or to maximum dosage of 125 mg per day.
Imipramine (Tofranil)	25 mg orally at bedtime; increase dosage by 25 mg every 2 to 4 weeks until response is adequate, or to maximum dosage of 150 mg per day.
Desipramine (Norpramin)	25 mg orally at bedtime; increase dosage by 25 mg every 2 to 4 weeks until response is adequate, or to maximum dosage of 150 mg per day.
Anticonvulsants	
Phenytoin (Dilantin)	100 to 300 mg orally at bedtime; increase dosage until response is adequate or blood drug level is 10 to 20 µg per mL (40 to 80 µmol per L).
Carbamazepine (Tegretol)	100 mg orally at bedtime; increase dosage by 100 mg every 3 days until dosage is 200 mg three times daily, response is adequate or blood drug level is 6 to 12 µg per mL (25.4 to 50.8 µmol per L).
Gabapentin (Neurontin)	100 to 300 mg orally at bedtime; increase dosage by 100 to 300 mg every 3 days until dosage is 300 to 900 mg three times daily or response is adequate. (Drug levels for clinical use are not available.)

Nutritional Status of Elderly in Asaba, Delta State Nigeria

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ABSTRACT

Background: In Nigeria, distributions of body composition are usually generated for children, adolescent, and middle-aged groups. This study describes three anthropometric measures (height, weight, and body mass index [BMI]) of elderly in Asaba, Delta state in Nigeria.

Methods: Data on body weight, height and BMI was derived from 176 subjects who attended the Medical Lectures of the Ebreme foundation for the elderly in Federal Medical Centre, Asaba. The SPSS (Statistic Package for Social Science) version 17.0 was used for data analysis.

Results: This study had 62.5% males and 37.5% females. Approximately 18.2% of them were aged 50-59 years, 43.8% (60-69 years), 29% (70-79 years) and only 9.1% aged 80 years or more. The general population had a mean weight of $70.98 \pm 13.98\text{kg}$, height $1.61 \pm 0.11\text{m}$ and BMI $27.36 \pm 5.60\text{kg/m}^2$. However, elderly men had lower body weight ($70.55 \pm 12.07\text{kg}$) and BMI ($25.90 \pm 4.2160\text{kg/m}^2$) than the elderly women ($71.70 \pm 16.76\text{kg}$ and $29.79 \pm 6.7060\text{kg/m}^2$ respectively) but they were taller in height ($1.65 \pm 0.08\text{m}$) than the elderly women ($1.55 \pm 0.12\text{m}$). The difference in height and BMI between male and female elderly was significant ($P < 0.05$; F-value 43.082 and 22.35 respectively). The mean value of weight and height decreased significantly with age ($P < 0.05$).

Conclusion: This study revealed that the body weight, height and BMI of the elderly in Asaba, Nigeria decline with age, with higher magnitude before the age of 60 years and from 80 years.

Keywords: elderly, anthropometric measures, body weight, height, BMI.

Introduction

Nutritional Status refers to the nutritional state of the body as expressed according to scientifically tested parameters which included weight, height and body mass index (BMI). Height and weight are two of the most easily obtained anthropometric measures and have been used extensively in screening and monitoring programs because overweight and obesity have been considered as risk factors for various diseases^{1,2,3}.

Anthropometry has been used at different ages for assessing health and nutritional well-being. But the distributions of body composition are usually generated for children, adolescents, and adults between the ages of 19 and 64 years, most of them from the perspective of nutrition^{4,5,6}.

Kuczmarski and his associates⁷ confirmed that the mean values of BMI increased with each 10-year increment until 50 through 59 years of age for both men and women and then decreased with age. However, researchers had called for more attention to the changes in body composition related to

aging^{8,9}. For cross-national comparison, Launer and Harris compared anthropometric data (height, weight, and BMI) from 19 geographically and ethnically varied samples of community-dwelling elderly people⁹. Across the studies there were large differences in the prevalence of overweight and underweight, but in all studies the mean values of height and BMI decreased with age.

Therefore, it is important to generate more information on body composition of elderly persons in Nigeria, to contribute more empirical evidence to aging studies. This present study however, focuses on the body composition of an elderly population sample in Asaba, Nigeria.

Subjects and Methods

A total of 176 willing participants completed this study. The survey was conducted from April to May, 2009 in the Federal Medical Centre, Asaba. Subjects were recruited from the attendees to the April quarterly medical lectures of the

Ebreme foundation of the elderly (an NGO). The subjects were grouped in batches and given an appointment over a period of 4 weeks for screening and data collection at the Federal Medical Center, Asaba. The Ethical Committee on human study at the Federal Medical Center, Asaba granted approval for this study protocol.

Three major anthropometric measures; body weight, height and BMI were used in the present study. The height and weight of the subjects were measured simultaneously by using standard hospital weighing balance and height measure (SMIC Health Scale, Made in China). Body weight was measured to the nearest 0.1 kg, with the participant wearing light clothes and without shoes, jackets, caps and heavy ornaments. Standing height without shoes was measured to the nearest 0.1 cm. BMI was calculated as the weight (in kg) divided by height (in m²). The criteria of the World Health Organization (WHO)¹⁰ were adopted to measure the prevalence of overweight and obesity. The subjects falling in the BMI categories between 25 and 29.9 were considered overweight; those with a BMI 30 and above were obese. A descriptive analysis was performed to generate relationship of height, weight, and BMI of these elderly persons by age and gender.

Analysis of data

All data were coded and entered into the SPSS (Statistic Package for Social Science) version 17.0. The categorical variables were presented as frequencies and percentages. The differences in mean values of height, weight, and BMI among different age groups and between sexes were examined by ANOVA analysis. Statistical significance was set at 95% confidence interval.

Results

The sex and age distributions are shown in Table 1. A total of 176 elderly subjects included in this study had 110 (62.5%) men and 66 (37.5%) women. Approximately 18.2% of the subjects were aged 50-59 years, 43.8% aged 60-69 years, 29% aged 70-79 years and only 9.1% aged 80 years or more.

The mean values of weight, height, and BMI are presented in Table 2. The general population had a mean weight of 70.98 ± 13.98kg, height 1.61 ± 0.11m and BMI 27.36 ± 5.60kg/m². According to gender, the elderly men had lower body weight (70.55 ± 12.07kg) and BMI (25.90 ± 4.2160kg/m²) than the elderly women (71.70 ± 16.76kg and 29.79 ± 6.7060kg/m² respectively) but they were taller (1.65 ± 0.08m) than the elderly women (1.55 ± 0.12m). The difference in height and BMI were statistically different between male and female elderly (P<0.05; F-value 43.082 and 22.35 respectively) whereas the difference in weight was not significant (F-value 0.274, P-value 0.601).

Table 3 described the distributions of weight, height and BMI according to age. The mean value of weight decreased with age; 50-59 year old group had 79.75 ± 15.21kg, 60-69 years had 70.56 ± 12.58kg, 70-79 years had 69.25 ± 13.49kg while 80 years and above had 61.00 ± 10.62kg. Similar decreasing trends were also found in the height and BMI of the elderly subjects. The height decreased from 1.66 ± 0.07meters (50-59 years old age group) to 1.54 ± 0.17meters (elderly age 80 years and above). BMI also decreased from 29.18 ± 5.86kg/m² among the group of 50-59 years old to

26.70 ± 9.15kg/m² among elderly of 80years and above. The magnitude of decrease in the weight and height were relatively more before the age of 60 years and 80 years. The decrease between the group of 60-69 years and 70-79 years were relatively small. The decreasing rates among the age groups were statistically significant in weight and height (P<0.05) while in BMI, the difference was not significant (F-value 1.563; P-value 0.200).

Discussion

Information on body composition of the elderly is needed for proper evaluation of their nutritional and functional status. The potential change in body composition may lead to associated changes in some other risk factors of diseases, especially for elderly persons. However, little is known about the value of anthropometric data for predicting the health status of older people.

As expected, our study found the elderly men taller whereas the elderly women were heavier with higher BMI. The higher value of mean weight can be translated into the higher mean BMI. The finding of higher BMI among the women in this study population is comparable with that of Heng-Chia¹¹, which also found elderly males taller than the females. A Nigerian study on 65-78 year old subjects from rural and urban areas of the south-western region of Nigeria also reported that male subjects were significantly taller than female subjects¹². Therefore, the higher body weight among the elderly females could be contributed to fat deposits rather than skeletal weight since the male were taller. A decreasing pattern of height, weight, and BMI values with age was demonstrated among the elderly in this our study. The magnitude of decrease in the BMI, weight and height were relatively more before the age of 60 years and after 80 years. This revealed that from the age of 60 to 80 years the elderly demonstrate minimal change in their nutritional status. Previous studies had reported an increasing trend in BMI only up to older adults^{13,14}. Also, Kuczmarski and his associates⁷ confirmed that the mean values of BMI increased with each 10-year increment until 50 through 59 years of age for both men and women and then decreased with age.

Though this study showed significant decline in height and weight with the subjects' age, however, the non significant decline in their BMI with age could be attributed to the low magnitude in their decline in weight. This is because Launer [9] reported that for BMI to decline with age, weight must also decline and to a greater extent than height.

Conclusion

This study demonstrated that the body weight, height and BMI of the elderly in Asaba, Nigeria decline with age. It also revealed that nutritional status of the elderly has minimal changes in anthropometric measures as from age of 60 years to 80 years.

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Table 1: Sex and Age distribution of subjects.

	Frequency	Percent
Sex		
Male	110	62.5
Female	66	37.5
Total	176	100
Age group		
50-59	32	18.2
60-69	77	43.8
70-79	51	29
80 and above	16	9.1
Total	176	100

Table 2: Mean values of body weight, height and body mass index (BMI) of subjects according to sex.

	Male	Female	Total	F-value	P-value
Weight(kg)	70.55 ± 12.07	71.70 ± 16.76	70.98 ± 13.98	0.274	0.601
Height(m)	1.65 ± 0.08	1.55 ± 0.12	1.61 ± 0.11	43.082	0.000
BMI(kg/m ²)	25.90 ± 4.21	29.79 ± 6.70	27.36 ± 5.60	22.35	0.000

Table 3: Mean values of body weight, height and body mass index (BMI) of subjects according to age.

	50-59 years	60-69 years	70-79 years	80 years and above	Total	F-value	P-value
Weight(kg)	79.75 ± 15.21	70.56 ± 12.58	69.25 ± 13.49	61.00 ± 10.62	70.98 ± 13.98	8.069	0.000
Height(m)	1.66 ± 0.07	1.61 ± 0.11	1.61 ± 0.09	1.54 ± 0.17	1.61 ± 0.11	4.113	0.008
BMI(kg/m ²)	29.18 ± 5.86	27.25 ± 5.06	26.57 ± 4.61	26.70 ± 9.15	27.36 ± 5.60	1.563	0.200

*Models and System of Elderly Care***Aging, Disability and Health Care Services Among Older Persons in India**

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ABSTRACT

Objectives: The aim of this study was to investigate patterns in disability prevalence among older persons and their health care seeking behavior and to see how they vary between the two selected states, which vary in socioeconomic and demographic conditions.

Methods: Data from the 58th round of National Sample Survey (NSS) on disabled persons was utilized. The states in focus were Kerala, the state well advanced in health transition processes and Uttar Pradesh, the state lagging in these processes. Multivariate logistic regression techniques were used to model socio-demographic determinants of disability prevalence among older persons and their treatment seeking behavior.

Results: Overall prevalence of disabilities was higher in Kerala compared with Uttar Pradesh. Locomotion, speech and hearing disabilities were more prevalent in Kerala. Correspondingly, prevalence of visual disabilities was lower in Kerala compared with Uttar Pradesh. Older persons in Kerala had greater likelihood of seeking treatment for reported disabilities.

Conclusion: This article documented critical evidence that both the disability and health care utilization rates are on the rise among older persons. At the same time, substantial disparities are demonstrated in the pattern of disability prevalence and health care utilization among older persons by socio-demographic factors and between Kerala and Uttar Pradesh.

Keywords: Aging, disability, health care, older persons.

Introduction

Amidst socio-economic consequences of demographic transition, increases in the percentage of those over 60 years and decreases in those under 15 years, so called population ageing, was the most noteworthy global phenomenon in the last century and will surely remain a distinctive trait of population dynamics in the twenty-first century. This process of demographic ageing no longer relates solely to developed countries, it has taken developing countries into its grip (Agrawal & Arokiasamy, 2009; Dadkhah, 2009; Harper, 2006).

In contrast with the relatively slow process of population ageing experienced by most of the developed countries, developing countries are greying at a faster pace (United Nations, 2002). Many developing countries are currently experiencing a rapid fertility decline and recent scientific and industrial advancements in medical and health care facilities have provided effective treatment and prevention of fatal diseases. These altogether have led to the increased longevity and consequently a rapid pace of population ageing. Currently two-thirds of the world's elderly population is living in developing countries and it is estimated to be doubled in the next 25 years (Harper, 2006). Fastest developing economies

like China and India will not only be in the forefront in terms of total population but also in terms of absolute number of elderly (60+) population (Bose, 2004). In India, the percentage share of elderly population (60+) is 8.1 percent in 2007, which is projected to be 20 percent by 2050 (United Nations, 2007).

However, the million dollar question is whether demographic ageing, couples with the reduced burden of disease and disabilities. There is no denying the fact that the added years of life are often accompanied by chronic physical and psychological impairments (Alam, 2000; Konjengbam, et al., 2007; Kover, 1991; Nagi, 1976; Nayar, 199; Shrestha, 20006; Sobba & Reddy, 2006). These added years may possibly be lived by them under the increased morbidity due to age related chronic illnesses and disabilities. People value longevity improvements more when the quality of life of the additional years is high. Living longer but with disabilities is nowhere near as enjoyable as living longer with good health (Cutler, 2001).

A bound volume of literature on ageing and disability facilitated to proceed with the pertinent notional perspective. The evidence on demographic ageing and disabilities in developed countries are well documented and mixed trends are observed in disability prevalence among older persons.

Some have been alarmed about the possibility of rising disability rates (AIHW, 2000; Braithwaite, 2008), and others have documented evidence of falling disability rates (Cutler, 2001; Khaw, 1997; Manton, 2002; Murabito, 2008; Spillman, 2004; Waidmann et al., 2000; Wolf, 2005). Furthermore, disability is found an important determining factor of Medicare costs among elderly persons. Elderly persons with disabilities are at higher risk of spending a greater proportion of family income on it (Drabek, 1994; Liu et al., 1997; Spillman, 2004).

There are very few empirical research based studies on disability status of elderly persons from developing countries (Konjengbam, et al., 2007; Pandey, 2009; Parahyba, 2009; Prakash, 2003; Sengupta & Agree, 2003; Shah, 1997; Yount & Agree, 2005). In India, very little information is available about disabled older persons and studies are often based on limited samples. Keeping this perspective in view, there is a critical need to assess the patterns in disabilities among older persons and their health care seeking behavior with respect to socio-economic and demographic determinants. National Sample Survey (NSS-58) data which contains information on disabled population is the most recent data. The data provides a valuable opportunity to study the patterns in disability prevalence among older persons and their treatment seeking behavior with respect to their socio-economic and demographic characteristics.

Considering the proportion of older persons, this study made an effort to work out comparative picture of patterns in disability prevalence and health service coverage between the two selected states and to see how they vary between the two states which vary in socioeconomic and demographic conditions. The study focus in this analysis in two selected states at varying stages of demographic transition namely Kerala and Uttar Pradesh (Table 1). The study aims to contribute to the ongoing debate whether disability prevalence tends to decline with demographic transition or is it a reversal of trends observed in developed countries. The differences in the pace of demographic transition and ageing between the two states can be seen from Table 1. The lower rates of infant mortality, under-5 child mortality, total fertility rate and the comparatively greater life expectancy at birth, ageing index and the percent share of older adults (60+) confirms the advancement of Kerala in demographic and ageing transitional processes. This comparative assessment of two states differing in health transition processes will help to understand the changing disability profile among older persons in the course of demographic transition in India.

Methods and Materials

The study used data from the 58th round of National Sample Survey (NSS) on "Disabled persons". Five types of disabilities: Mental, Visual, Hearing, Speech and Locomotion were covered in this round. In this round, a total of 70,302 household were surveyed, 45,571 from rural and 24,731 from urban areas. Data was gathered by face-to-face interview of each member of every sample household.

In the 58th round of NSSO, a total of 43,864 older persons (60+) were surveyed at the national level, out of which the number of aged persons surveyed in Uttar Pradesh and Kerala

were 5,702 and 2,434 respectively. To have an appraisal of patterns in disabilities among older persons, disability prevalence rates were defined as the ratio of the number of older persons who reported a specific disability, to sample population (60+) eligible to report a disability.

Multivariate logistic regression models were estimated to study the patterns in disability prevalence by socio-economic and demographic predictors of older adults. The dependent variable was defined in two mutually exclusive categories: coded '1' for reporting a specific disability and '0' for others. The category '0' includes all those older persons who did not report any disability or had reported a disability other than the disability defined as a positive outcome in the regression model.

Binary logistic regression models were further estimated to examine differentials of treatment seeking behavior among older persons. The dependent variable was dichotomized with value '1' if an older person received any treatment for the reported disability, otherwise '0'. The analysis on health care utilized the sample of older adults who reported any disability at the time of survey. Appropriate weights were applied in all the statistical analyses performed in this paper. STATA 9.0 program was used for all statistical analyses carried out in this paper.

Cataloguing of Predictor Variables

The influence of socio-economic and demographic factors on disability prevalence patterns and treatment seeking behavior were estimated using multivariate logistic regression models. Evidence suggests that disability prevalence among older persons and their behavior of accessing health care services vary remarkably by socio-economic and demographic factors. In the light of evidence documented in previous literature, the predictor variables included in multivariate regression models were age, sex, residence, living status, social group, educational level, monthly per capita expenditure (MPCE) quintiles, and living arrangements of older adults. The variables education and living arrangement were canvassed only for disabled persons, therefore could not be considered as predictors of disability prevalence among older persons. The categorization of predictor variable is described below.

Age: 60-64 (ref.), 65-74 and 75+

Sex: Male (ref.) and Female

Residence: Rural (ref.) and Urban

Living status: This variable was defined to capture the effect of spouse loss on disability prevalence and health care utilization among older persons. It had two categories: living with spouse and living without spouse with the former as a reference category. The category included never married, widowed/widower, divorced and separated older persons

Education: Literate and Illiterate (ref.)

Monthly Per Capita Expenditure (MPCE): This variable of quintile distribution was obtained by dividing the total household expenditure by the household size and then distributing households into three equal percentile groups.

Social group: Scheduled castes/Tribes (SCs/STs), Other backward classes (OBCs) and Others (ref.)

Living arrangement: Living with family (ref.), Living

without family members and Living with others.

ref. = reference category

Results

Disability Prevalence Among Older Persons

Figure 1 established the ensuing patterns in disability prevalence among older persons with the progress in aging process measured in terms of aging index across the states. Across the major states of India, the prevalence of disability among older persons gradually increased with the encroachment in aging process. Jharkhand and Bihar positioned on the bottom line of the aging process in the country displayed the lowest prevalence of disability by 32 percent and 36 percent, respectively. Compared with this, Tamil Nadu (58 percent) and Kerala (53 percent) having the highest values of aging index across the major states were documented with highest prevalence of disability in the country.

In summary, the state comparisons of aging-disability prevalence linkages suggest ample evidence that advancement in the aging process in India has resulted in increasing prevalence of disabilities among older persons.

Table 2 depicts a comparative picture of disability prevalence per 1000 persons by different types of disabilities and by sex and residence among older persons in Uttar Pradesh and Kerala. Overall, the disability prevalence was almost 1.2 times higher in Kerala (528) compared to Uttar Pradesh (437). Among older persons, the prevalence of all types of disabilities except visual disabilities was greater in Kerala compared with Uttar Pradesh. In Kerala, locomotion disabilities (222) were highly prevalent followed by hearing (125), visual (113) and mental disabilities (39). In Uttar Pradesh, visual disabilities (180) were highly prevalent among older persons followed by locomotion (161) and hearing disabilities (77). Apparently, Kerala, a demographically built-up state is experiencing a higher prevalence of locomotion and mental disabilities as a result of sedentary lifestyles.

Substantial differentials were observed in disability prevalence among older adults by sex and residence (Table 2). In both the states, all types of disabilities except locomotion were concentrated more in rural than urban areas. In rural Uttar Pradesh, the most prevalent disabilities were visual (190) and locomotion disabilities (150). Hearing and mental were next highly prevalent disabilities. Correspondingly, locomotion (216), hearing (130) and visual disabilities (113) emerged as the most prevalent disabilities in rural Kerala. The urban areas of Uttar Pradesh were contrasted with more widely prevalent disabilities of locomotion (220) and visual (114) followed by hearing disabilities (79). Nevertheless, similar patterns prevailed in Kerala.

Between the two sexes as a whole, the disability prevalence was marginally higher among male older adults than females in both the states. However, female older persons reported greater prevalence of mental, visual and hearing disabilities in both the states. In contrast, the prevalence of locomotion and speech disabilities was more among males than females.

Determinants of Disability Prevalence

The estimates of odds ratios from logistic regression analyses on the likelihood of reporting various disabilities

among older persons in Uttar Pradesh and Kerala are presented in Table 3. In both the states, older persons residing in rural areas had greater likelihood of reporting disabilities compared with those in urban areas. Contrastingly, locomotion disabilities were more prevalent in urban areas. Females were less likely to report any disability except mental in both the states.

Increasing age is often associated with increasing physical and mental impairment and consequently, oldest-old persons had greater likelihood of reporting disabilities (Chanana & Talwar, 1987; Sengupta & Agree, 2003). Surprisingly, mental disabilities were more pronounced among older adults in age 60-64. Predictor monthly per capita expenditure quintiles showed positive direction of impact on the disability prevalence among older adults. The likelihood of reporting disabilities increased with MPCE quintiles. The similar pattern was observed for all types of disabilities except speech disabilities. In both of the states, older persons with higher income quintiles had lower chances of reporting speech disabilities.

Social status had prominent alliance with the likelihood of reporting disabilities among older persons. Older persons from backward social groups i.e. SCs/STs and OBCs had greater likelihood of reporting disabilities compared with older persons of other castes. However, this was contrasted with the greater likelihood of reporting hearing disabilities among other caste groups in Uttar Pradesh. In Kerala, older persons of SCs/STs and OBCs were less likely to report speech disabilities.

Living arrangement had shown plausible association with the reporting of disabilities among older persons. In both states, older persons living without spouse had higher likelihood of reporting disabilities compared with older persons living with spouse.

Health Care Services Among Older Persons

Table 4 portrays a comparative picture of treatment seeking behavior among older persons who reported disabilities between Uttar Pradesh and Kerala. Age was negatively associated with utilization of health care services in both the states. Older persons residing in urban areas had greater chances of accessing health care services. In Uttar Pradesh, urban.

dwellers were 1.8 times more likely to seek treatment for reported disabilities compared with rural older inhabitants. However, disparities in health care utilization by residence were comparatively lower in Kerala. In Uttar Pradesh, female older persons were 14 percent less likely to seek treatment for reported disabilities compared with male older persons. This was contrasted in Kerala with 1.5 times higher chances of accessing health care among female older persons. Such reversal of trend possibly arises as result of differences in health transition stages in these two states.

Results reveal that better socio-economic status is closely associated with greater utilization of health care services among older persons. In both states, the likelihood of accessing health care services among older persons increased with MPCE quintiles. Literate older persons were more likely to seek treatment for reported disabilities compared with illiterates. Older persons belonging to backward social

classes i.e. SCs/STs were less likely to seek treatment. Older persons of OBCs had 25% lesser chances of utilizing health care services in Uttar Pradesh compared with older persons in other social classes. This was contrasted in Kerala with OBCs older adults reporting greater utilization of health care services.

Loss of spouse in old age is often associated with poor health outcomes and less or no desire to live longer among older persons. Consequently, older persons who experienced spouse loss were at greater risk of not seeking treatment for reported disabilities. In Uttar Pradesh, older adults living without spouse were 36% less likely to access health care services compared with those living with their spouse. A similar pattern was observed in Kerala. However, living arrangements of older persons did not show a significant impact on their treatment seeking behavior.

Discussion and Conclusion

Compared with developed countries, the pace of population ageing is much faster in developing countries like India. Consequently, they will have less time to adjust to the consequences of population ageing. The increasing longevity has now presented a new challenge for policy makers to ensure the well-being of the enormous number of the elderly (Medhi, 2007). As a result of the faster pace of demographic transition and advancement in health transition stages, the Indian states are characterised by higher disability burden among the older adult population. Set to the above context, this paper has documented critical evidence on the patterns of disability and health care utilization among older persons with respect to socio-economic and demographic determinants.

The study has substantiated that Kerala, which is in an advanced stage of health transition had a higher burden of disabilities compared with Uttar Pradesh, the state lagging in these processes. With several states advancing in the process of health transition, most of the Indian states will be distressed with the increasing burden of disabilities among older adults in the coming decades. At the same time, reporting of multiple disabilities is common among older persons and it is expected to rise more consequent with the progress in health transition stages. The rising burden of disabilities will demand for an expanded health care and support system, which is still in a very pathetic situation in India.

Results from this study confirm that there are substantial disparities in disability prevalence among older persons and their treatment seeking behavior between Uttar Pradesh and Kerala by gender, residence and socio-economic conditions. In both the states, disabilities were concentrated more in rural than urban areas. A plausible explanation can be given that health care services are more concentrated in urban areas and are supposed to provide quality health care services. At the same time, older adults living in urban areas are more advantaged in terms of awareness and exposure to better household environment, therefore have higher chances of seeking treatment. Furthermore, locomotion disabilities were more pronounced in urban areas, which could be an outcome of sedentary life-style practices among urban dwellers. For some extent, better reporting of disabilities by the urban adults could also be responsible for this. The same reason could be cited for the greater reporting of disabilities among

older persons of higher income quintiles.

There is ample evidence which shows that better socio-economic conditions are associated with greater utilization of better and high quality health care (Cutler *et al.*, 2008; Khetarpal *et al.*, 1996; Kumar, 2003; Mazumder, 2007; Smith, 2007). In both the states, chances of seeking health care were higher among literate older persons. Similarly, health care utilization was positively associated with monthly per capita expenditure quintiles.

Living arrangement has its own significance on health and well being of older populations, particularly in traditional societies such as India. Traditionally, younger generations are supposed to take responsibility for their older counterparts in the house. In addition to fulfilling basic daily requirements, younger generations were used to provide emotional, social and mental support to their previous generations. Rapid urbanization and movement of younger generations from their home in the search of career advancement have tended to weaken traditional systems and ancestral values in Indian societies (Bhat *et al.*, 2001; Chanana and Talwar, 1987; Pal, 2004; Prakash, 2007; Shah, 1999). Consequently, disabilities were more pronounced among older adults living without their spouses. At the same time, level of health care utilization was lower among them compared with those living with spouses.

The shift in disability prevalence is clearly evident in Kerala and other Indian states are expected to pass these stages of health transition. The observed differences in the effects of various socio-economic and demographic determinants of disabilities and related health care between Uttar Pradesh and Kerala are largely the result of apparent lag in health transition stages of the two states. Diseases, particularly multiple chronic illnesses, are the main causes of old age disabilities. Interventions should therefore include their prevention and effective management, including self-management. An important starting point for successful prevention is to use the available evidence to dispel the old myths that the risk of disease is a normal part of old age and not amenable to change, and that an old body cannot respond positively to lifestyle changes. The promotion of physically active lifestyles is among the most promising strategies. Improved disability prevention will require a change in organizational priorities, restructuring of the symptom-driven health care system, and training for providers and clients to cooperate in collaborative care. Many interventions are most effective in concert with community resources and policies (Heikkinen, 2003).

Health promotion and cost-effective interventions based on the primary health care approach over a life-course, especially at the village level, will greatly help towards achieving the goal of healthy aging (Kumar, 2003). In addition to this, the rapidly changing socio-economic circumstances and inter-state disparities should be taken care to ensure a comprehensive policy regime for older persons in India.

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Table 1 Selected socio-demographic indicators in Uttar Pradesh, Kerala and India

Socio-demographic indicators	Kerala	Uttar Pradesh	India
Infant Mortality Rate (IMR) ¹	14	73	58
Total Fertility Rate (TFR) ²	1.9	3.8	2.7
Under-5 Child Mortality ¹	3.0	24.7	17.3
Life expectancy at birth (e00) ³	74.0	60.0	63.5
Aging Index ⁴	40.2	17.2	21.1
Percent older adults (age 60+) ⁴	10.5	7.0	7.4

Sources:

¹ Registrar General, Sample Registration System (SRS) Bulletin, 2005, office of Registrar General, New Delhi.

² International Institute for Population Sciences, National Family Health Survey (2005-06) India Report, Mumbai.

³ Registrar General, SRS based abridged life table, 2002-06, office of Registrar General, New Delhi.

⁴ Registrar General, Census of India, 2001, Office of Registrar General, New Delhi.

Note: Ageing index is defined as the percentage of older adult (60+) population to children population below age 15 years.

Table 2 Disability prevalence (per 1000) among older persons (60+) in Uttar Pradesh and Kerala, 2002

Type of Disability		Uttar Pradesh			Kerala		
		Male	Female	Total	Male	Female	Total
Mental	U	10	8	9	28	35	32
	R	8	12	10	31	48	41
	T	8	12	10	31	45	39
Visual	U	98	130	114	117	109	112
	R	162	224	192	88	132	113
	T	152	209	180	95	126	113
Hearing	U	99	58	79	88	120	106
	R	78	76	77	122	137	130
	T	81	73	77	113	133	125
Speech	U	22	16	19	34	17	24
	R	8	6	7	45	20	31
	T	10	7	9	42	19	29
Locomotion	U	237	203	220	297	200	242
	R	178	121	150	232	205	216
	T	187	134	161	248	204	222
Any disability		438	435	437	529	526	528

U- Urban R- Rural T- Total

Table 3 Logistic regression modelling of socio- demographic factors of disability prevalence among older persons in Uttar Pradesh (N= 5702) and Kerala (N= 2434), 2002

Background Variables	Mental		Visual		Hearing		Speech		Locomotion	
	Uttar Pradesh	Kerala	Uttar Pradesh	Kerala	Uttar Pradesh	Kerala	Uttar Pradesh	Kerala	Uttar Pradesh	Kerala
Residence (ref.= rural)										
Urban	0.89 (0.41- 1.97)	0.72 (0.43- 1.22)	0.57*** (0.45- 0.72)	1.02 (0.75- 1.38)	0.99 (0.74- 1.31)	0.81 (0.59- 1.09)	2.37** (1.24- 4.53)	0.75 (0.41- 1.36)	1.50*** (1.24- 1.82)	1.12 (0.90- 1.41)
Sex (ref.= male)										
Female	1.27 (0.73- 2.19)	1.37 (0.77- 2.42)	1.32*** (1.14- 1.52)	0.91 (0.66- 1.26)	0.78** (0.64- 0.96)	0.79 (0.58- 1.07)	0.65 (0.36- 1.17)	0.35*** (0.19- 0.63)	0.61*** (0.52- 0.70)	0.64*** (0.50- 0.81)
Age (ref.= 60- 64)										

65- 74	0.37*** (0.20-0.67)	0.98 (0.59-1.63)	1.80*** (1.49-2.17)	1.67** (1.09- 2.57)	1.28* (0.98-1.68)	1.23 (0.84- 1.80)	0.90 (0.44-1.82)	2.04** (1.01- 4.13)	0.95 (0.81-1.12)	0.97 (0.74- 1.27)
75+	0.30*** (0.13-0.67)	0.35*** (0.19-0.67)	3.30*** (2.70-4.04)	2.97*** (1.95- 4.54)	2.46*** (1.86-3.23)	2.13*** (1.47- 3.08)	1.49 (0.71-3.11)	1.35 (0.63- 2.90)	0.79** (0.64-0.97)	1.74*** (1.33- 2.29)
Social Group (ref.= others)										
STs & SCs	1.94* (0.92-4.08)	1.24 (0.60- 2.57)	1.73*** (1.41-2.14)	1.33 (0.86- 2.04)	0.96 (0.71-1.28)	0.83 (0.54- 1.27)	0.39** (0.16-0.97)	1.48 (0.63-3.47)	1.10 (0.89-1.36)	1.21 (0.85- 1.72)
OBCs	1.07 (0.53-2.18)	1.17 (0.72- 1.89)	1.39*** (1.15-1.67)	1.01 (0.76-1.36)	1.0 (0.78-1.27)	0.67*** (0.51-0.88)	0.50** (0.27-0.95)	1.38 (0.79-2.42)	1.01 (0.84-1.20)	1.22* (0.98-1.52)
Living Status (ref.= living with spouse)										
Living without spouse	1.55 (0.89-2.71)	3.11*** (1.83- 5.26)	1.97*** (1.70-2.29)	2.05*** (1.48- 2.84)	2.02*** (1.63-2.50)	2.03*** (1.49- 2.7)	1.40 (0.77-2.54)	1.48 (0.81- 2.68)	1.40*** (1.20-1.64)	1.39** (1.09- 1.78)
MPCE@ quintiles (ref. = quintile1)										
Quintile ²	1.40 (0.73-2.67)	1.27 (0.59- 2.70)	1.18** (1.00-1.38)	1.44* (0.93- 2.21)	1.43** (1.13-1.82)	0.88 (0.58- 1.34)	0.46** (0.22-0.94)	0.54 (0.25- 1.19)	0.97 (0.82-1.16)	1.01 (0.71- 1.42)
Quintile ³	1.69 (0.81-3.53)	1.50 (0.72-3.11)	1.01 (0.83-1.24)	0.98 (0.63-1.51)	1.30* (0.98-1.73)	1.07 (0.72-1.59)	0.77 (0.37-1.58)	0.99 (0.49- 2.0)	1.37*** (1.13-1.67)	1.39** (1.00- 1.94)
Log likelihood	-302.93	-379.18	-2481.59	-816.17	-1478.56	-875.69	-274.56	-307.73	-2460.43	-1256.04
LR chi ²	23.07	37.07	401.97	85.29	140.45	77.74	27.19	24.9	94.69	67.08
Prob. > chi ²	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.03	0.001	0.001

***p<0.001, **p<0.05, *p<0.10, MPCE@- monthly per capita expenditure, Reference category - rc

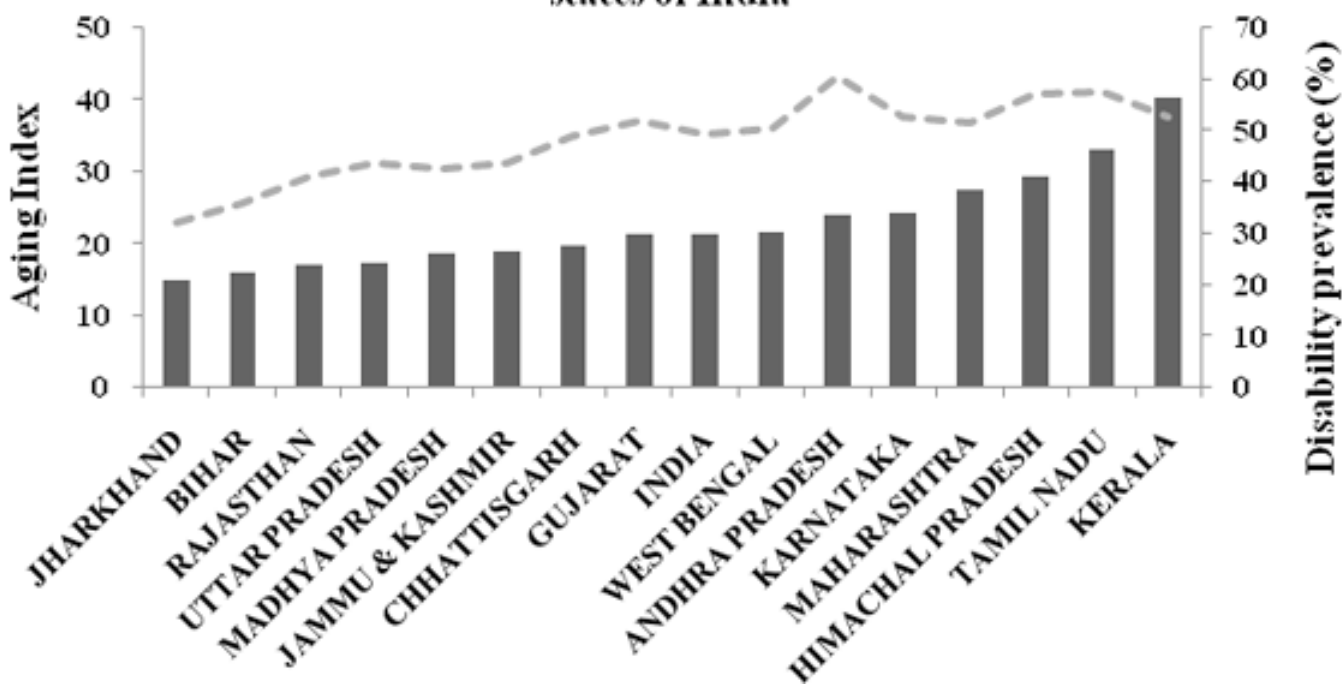
Table 4 Logistic Regression Analyses: Modelling background factor of treatment seeking behaviour among older persons in Uttar Pradesh and Kerala, 2002

Background Variables	Uttar Pradesh (N=2380)		Kerala (N=1213)	
	Exp (β)	(95% CI)	Exp (β)	(95% CI)
Residence (ref.= rural)				
Urban	1.84***	(1.29-2.63)	1.17	(0.83-1.66)
Sex (ref.= male)				
Female	0.86	(0.69-1.08)	1.50**	(1.02-2.20)
Age (ref.= 60-64)				
65-74	1.14	(0.88-1.49)	0.94	(0.59-1.50)
75+	0.72**	(0.55-0.94)	0.63**	(0.40-0.98)
Social Group (ref.= others)				
STs & SCs	0.63***	(0.46-0.86)	0.68*	(0.43-1.08)
OBCs	0.75**	(0.56-1.00)	1.39**	(1.01-1.91)
Education (ref.= illiterate)				
Literate	1.44**	(1.01-2.06)	1.09	(0.80-1.50)
Living Status (ref.= living with spouse)				
Living without spouse	0.64***	(0.51-0.81)	0.40***	(0.26-0.60)
Living Arrangement (ref.= living with family)				

Living without family members	0.74**	(0.56-0.97)	1.34	(0.80-2.24)
Living with others	1.13	(0.79-1.62)	0.85	(0.55-1.32)
MPCE@ quintiles (ref. = quintile ¹)				
Quintile ²	1.44***	(1.15-1.81)	1.49*	(0.94-2.37)
Quintile ³	1.83***	(1.37-2.45)	1.27	(0.82-1.97)
Log likelihood	-1185.1		-605.23	
LR chi ²	122.27		60.08	
Prob. > chi ²	0.001		0.001	

*** $p < 0.001$, ** $p < 0.05$, * $p < 0.10$, MPCE@- monthly per capita expenditure, Reference category - rc

Figure 1 Aging index and disability prevalence (%) in major states of India



*Office Based Geriatrics***Daflon in the Treatment of Hemorrhoids***Samer AL-Ghzawi, MD, MRCS*General surgery Department
King Hussein Medical City**ABSTRACT****Objective:** To demonstrate the value of Daflon in the management of hemorrhoidal symptoms in Jordanian patient attending the Surgical clinic.**Methods:** This is a prospective clinical study, of 105 consecutive patients suffering from hemorrhoidal problems including thrombosed piles. Detailed history and proctoscopic examination to determine position, size, and degree of hemorrhoids was conducted in all patients attending the Surgical Clinic at Prince Rashid hospital, Irbid, Jordan. The study was conducted over a 6-months period (December 2003 to May 2006). All were started on Daflon; 2 tablets twice daily for 4 weeks and were followed up weekly during the study period and proctoscopic examination was conducted at each consultation.**Results:** The mean age was 35 (range 19-70) years. The majority (77%) suffered congested hemorrhoidal disease and only 8% had thrombosed piles. Previous surgery for piles, was noted in 11%. Concomitant medical diseases were present in 10%. The degree of piles were first degree (23 patients), 2nd degree (73 patients), 3rd degree (9 patients) and 4th degree (0). There was a statistically significant ($p < 0.001$) improvement in pain, heaviness, bleeding pruritus, and mucosal discharge from baseline to last visit. There was also a significant ($p < 0.001$) improvement in the proctoscopic appearance. Five patients failed to improve on Daflon; therefore they underwent surgery. The side effects of Daflon (mainly gastrointestinal symptoms) were encountered in 5 patients but did not force interruption of the medication.**Conclusion:** Daflon is a very safe and effective drug in the treatment of all hemorrhoidal symptoms in the population of the north of Jordan.**Methods**

The study was conducted over a 6 month, period (December 2001 to May 2002). All patients presenting with symptoms related to hemorrhoidal disease were recruited. Detailed history including duration of symptoms, current medications, piles and previous surgery for piles was noted. Physical examination to exclude concurrent medical illnesses was also conducted. Baseline proctoscopic examination was carried out and the size, grade, and position of piles were clearly noted. Patients were then consented for inclusion in the study after thorough explanation of Daflon and the possible side effects. General advice on how to avoid constipation and regulation of bowel habits was also given. Daflon 4 tablets in 2 divided doses were given per day with meals (each tablet contains 0.375-in flavonoid extracts of rutaceae equivalent to 150mg diosmin) for 4 weeks. Patients were seen on a weekly basis during the treatment period and inquiries were made of worsening or improvement of symptoms, and any side effects to Daflon. Proctoscopic examination was also conducted at each visit to determine the degree of improvement. Statistical analysis comparing symptoms and proctoscopic improvement at first and last visits was carried out using Wilcoxon Signed Ranks test and Chi Squared test. The study was approved

by the Credential and Scientific Research Committee of the Hospital.

Results

There were 105 patients (70 males and 35 females) who completed the treatment and the data was available for analysis. Their mean age was 35 (range 19-70) years. Eighty-one patients (77%) suffered congested hemorrhoidal disease, 16 (15%) acute hemorrhoidal attacks and 8 (8%) thrombosed piles. Twelve patients (11%) had previous surgery for piles and 25 (24%) were already on antihemorrhoidal medications with no apparent benefit. Ten (10.5%) had some associated medical diseases such as diabetes, hypertension, and others. Twenty-three patients (22%) had 1st degree hemorrhoids, 73 (70%) had 2nd degree, 9 (8%) had 3rd degree and none for 4th degree. There was a statistically significant ($p < 0.001$) improvement in pain, heaviness, bleeding, pruritis and mucosal discharge from the 1st (baseline) to the last visit. There was also a significant ($p < 0.001$) improvement in proctoscopic appearance of piles; 26 patients had an excellent improvement, 51 good, 16 moderate and 7 nil. Two patients; a pregnant female in the 3rd trimester and a patient with Behcet's disease on warfarin reported marked improvement in symptoms due to congested piles after 2 and 3 weeks of Daflon therapy. There were 5 patients whose symptoms failed to

improve on Daflon; therefore, they underwent surgery. Minor side effects of Daflon (mainly gastrointestinal symptoms) were encountered in 5 patients, but did not force interruption of medication.

Discussion.

Hemorrhoids and their symptoms are common surgical afflictions throughout the world and the Jordanian people are no exception. The exact data on its incidence in the Hashemite Kingdom of Jordan is however lacking. In the author's surgical unit, a good percentage of patients attending the General Surgical Outpatient Clinic are due to piles or pile-related problems. Furthermore, the number of surgical procedures performed for piles in the Department of General Surgery at Prince Rashid Hospital has an average of 200 procedures per year; making hemorrhoidectomy the 3rd most common elective surgical procedure performed in our department after cholecystectomy and hernia repairs. The best treatment of hemorrhoids is prevention. This can be achieved by avoiding constipation, intake of high fiber diet and administration of bulk laxatives if necessary. Local symptoms such as anal irritation and pain can be alleviated by some soothing creams and suppositories, but they hardly provide long term benefit. On the other hand, surgical treatment of hemorrhoids is often associated with morbidity that gives it a bad reputation and is therefore unpopular among patients. Although non-surgical treatments of piles such as rubber band ligation, sclerotherapy, Photocoagulation and cryotherapy are well accepted and very popular with the patient but they are not suitable for all grades of piles. Therefore, all effective medical treatment for symptoms of piles would be a very attractive option to patients and surgeons. Daflon is a new flavonoid vasoprotector venotonic agent active whose active principle is a micronized flavonoid fraction that contains flavonoid extracts of rutaceae equivalent to 150mg diosmin expressed as hesperidin. It is a phebotropic agent that has a proven efficacy in the treatment of various venous disorders. Considering piles as a venous disease, as bleeding occurs from presinusoidal arterioles, the use of Daflon for treatment of piles would be a very attractive option.

This article studies the efficacy of Daflon in the treatment of hemorrhoids of various grades in patients attending the General Surgical Clinic in Prince Rashid Hospital with various hemorrhoidal symptoms.

This prospective trial confirms the safety and efficacy of Daflon in the treatment of all symptoms of hemorrhoids. Good-excellent proctoscopic improvement was achieved in 77 out of 105 patients. Significant improvement in symptomatology was also evident. This study also confirms Daflon efficacy in various degrees of piles except for the 4th degree. None of the patients in this study had 4th degree piles. The use of Daflon compares favorably with rubber band ligation in controlling bleeding from non-prolapsed piles and it is even cheaper. Another advantage of Daflon is its trivial side effects that are mainly gastrointestinal and can be easily averted by taking tablets with or after meals. Furthermore, the use of Daflon in pregnancy; a period when piles is common and surgery is relatively contraindicated, is safe. This safety is explained by the minimal transplacental passage. Daflon is usually given 4-8 weeks before and for 4 weeks after delivery.⁹ This study included a pregnant female in her 3rd trimester who presented with congestive hemorrhoidal

disease. A Course of Daflon alleviated all her symptoms within 2 weeks. Using Daflon during lactation is also safe, as its passage in milk is minimal.¹⁰ Another advantage of Daflon is the lack of interaction with anticoagulants such as warfarin and other coumarins. This study also included a patient with Behcet's disease who was on warfarin and whose hemorrhoidal symptoms were controlled with a month course of Daflon, which has averted surgery with all its attendant risks. Although this is a prospective study, certain pitfalls can be addressed. It was a non-randomized study and 2 control groups, and the investigators were not blinded so a degree of bias may be inevitable.

Furthermore, not all the proctoscopic examinations were carried out by the same investigator at each visit as this was practically impossible; leaving some room for subjective variations. Moreover, improvement in symptoms relied on subjective measures. Also, compliance of patients can not be accurately determined. Some patients, albeit a small percentage, showed some reluctance in joining this trial and were favoring surgery as the treatment of choice. They were given a trial of Daflon but their compliance was questionable.

Approximately 24% of the patients in this study were already using some other antihemorrhoidal treatments, hence the improvement in symptoms may not entirely be due to Daflon although those patients did not report any effective benefits from topical agents. Such pitfalls however, cannot undermine the significant improvement of all hemorrhoidal symptoms and the proctoscopic appearance of piles by a month's course of treatment in a very good number of patients (approximately 75%). A prospective randomized study would have settled all these reservations and would have added greater strength to the study. As the long-term effect of Daflon treatment on hemorrhoids was not studied, it would be very interesting to follow-up patients included in this study to see if symptoms recurred and how long after the initial treatment has been stopped. It would be of interest also to determine the percentage of the study patients who eventually come to surgery. The author believes that recurrent symptoms can be similarly treated by another course of Daflon.

Failure to control symptoms is an indication for other forms of treatment modalities that are available to the surgeon. A new promising operation, that is suitable for piles, especially that accompanied by mucosal prolapse is stapled hemorrhoidectomy. Daflon may play a role in reducing post-hemorrhoidectomy bleeding even after the stapled procedure.¹² This study confirms the efficacy of Daflon in treating various hemorrhoidal symptoms in Jordanian patients attending the surgical clinic. It also confirms its significant efficacy in improving the proctoscopic appearance of piles after a month's course of Daflon. This calls for an initial trial treatment of piles with Daflon before embarking on surgical management with all its attendant risk of morbidity.

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