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Limited Formal Education and its Impact of Disease Profile of Older Persons of Rawalpindi

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Headings

Abstract: *Increased life expectancy and low mortality rates are the major reason for the increasing number of the older population. Developed countries are not only facing this problem, but the number of developing countries are also increasing. Pakistan is also among those countries having a greater portion of the older population. Objective: The present study was focused on exploring the relationship between the educational achievement of older persons and their disease profile. Methods: A structured tool was developed to interview 384 older persons. Data were coded and analyzed in SPSS. Male and female participation was with ratio 70:30 while 53.9% sample was age 60-65 years. Results: Most of the respondents were illiterate, followed by primary, secondary, and matriculation degree holder elders. Hypertension, Heart problem, Diabetes, Arthritis, and Asthma issue are observed among older persons. Diabetes is the only disease reported by OPs with a qualification from illiterate to a Master's degree with varied percentiles. Regression model [y=5.0749+.0646x] with R Square = .0013. Conclusion: We conclude that a relationship exists among study variables but non-significantly while the value of R^2tells us how assertive you can be that each distinct variable has some correlation with the dependent variable, which is the important indicator.*

Key Words: Older Persons, Aging, Disease Profile, Education and Disease, Elder People

Introduction

Old age and death are `automated' occasions with an in-built biological regulator, which retains the pathway of time and starts the ageing progression when definite parameters

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are encountered, as identified by Hayflick (1996).

Age taxonomy is different among nations and varied over time, reflecting in many examples the social class variances or functional capacity connected with work power, but mostly not related to the reflection of the present economic and political situation. Most of the time, the explanation is allied with the retirement age limit, which is different in the case of males and females sometimes. This change in living patterns provides the basis for the meaning of ageing, which happened amid the years of 45 and 55 ages for females and for men, it is between 55-75 years (Thane, 1978).

Another dimension identified by Christina (2005) and is the notion of life-cycle or life-stage. Most of the time, it is perceived as an organized evolution starting from early childhood to old age with socio-cultural and biological elements interacts to administer the arrangement of development. Medium age has become known as a unique phase recently and, gradually, the trend is observed to distinguish between the `young' elderly (normally defined between 65 – 74years) and the `old' elderly (over 75years). She further highlights the distinction between 'third age' (50 – 74 years) and 'fourth age'.

"Aging of the population" is an abstract word for moves in the age dissemination (like age-structure) of a populace against elder age (Demeny and McNicoll 2003). Traditionally, "elderly" has been explained as a chronological age of 65years old or older than that, whereas elders between 65 – 74years old are discussed as "early elderly" and people having age 75 years above old as "late elderly" (Orimo et al., 2006).

Different subjects define it differently. In Sociology, the characteristic of individual/human ageing is linked with development in the conditions or state of the individual as a member of the family, community, and society (Clark, 1963). Besides, biological anthropologists stress chronic illness, bone-biology, reproductive-biology, and body structure (Ice 2006), while psychological ageing is concentrating on modifications in the central-nervous-system of individuals, in sensual and perceptual dimensions and incapability to consolidate and employ information (Anderson 1956; Birren 1959). Gerontology, not to be tangled with geriatrics, which focuses on the wellbeing of older persons especially care and avoidance of age bound ailments, gerontology focus on the progression of ageing and complications allied with the socio-biological and psychological issues of ageing (UCLA, 1995).

Ahmed et al. (2014) stated that 6% of the total world older population has resided in Asia. Pakistan is at number six among the top-ranking population countries of the world, with 200 million populations. In 2006 Pakistan had around 166 million populations. Populace above 65 years of age contributes 4.48% in the total population when life expectancy is 62 years. As the elder's population increases, the number of challenges to the health care system will face an upward trend in the future (PDP, 2018).

The ageing population is increasing globally, and the problems of their marital status, social concerns, and health problems are rising in the elder's population (Gulati and Rajan, 1999; UN, 2007; Gubhaju, 2008; Agrawal and Keshri, 2014). Concerning health issues, research represents that

pervasiveness of optical impairment, dyspnoea, immovability, and urinary matters had severely affected the lives of older persons. Generally observed chronic diseases among the elderly population are; hypertension, Diabetes mellitus, and arthritis which highlights mobilization of resources (Zafar et al., 2006). Heart problems and heart stroke are remarkable causes of functional disability and death among women alike in advanced and developing nations and absolutely between those women who are poor (Leeder *et al.*, 2004).

Brigola et al. (2019) quantified that Limited levels of Formal Education (LFE) are still general in older people, predominantly elders of low income and middle-income states. Globally, the urban educational setting is assumed superior as compared to rural educational settings. Ageing in Pakistan is at an increasing rate. The present study was designed to explore the relationship between formal educational attainment and disease outline of older persons of Rawalpindi city.

Materials and Methods

Ageing is a global phenomenon and most of the developed countries facing this issue. Pakistan is among those countries where the elderly population is growing rapidly. This research was designed to determine the relationship between the disease profile of older persons and the prevalence of the disease. A structured tool was developed to collect data from older persons of Rawalpindi city. A sample of 384 older persons was interviewed for this by getting their verbal consent. Data were coded and entered into SPSS for analysis and explore relationships.

Results and Discussion

Preceding studies show that certain aspects, including age, sex, chronic illness, cognitive health, socio-economic status, education level, and marriage, were linked with the functional health status transition of the elderly (Luppa et al., 2008; Von Strauss et al., 2003; Penninx et al., 1999). In this research, the main focus is on formal education and the chronic disease status of older persons.

Table 1. Background Indicators

Question	Categories	N	%
Sex	Male	269	70.1
	Female	115	29.9
Age Distribution	60-65	207	53.9
	66-70	80	20.8
	71-75	51	13.3
	76-80	31	8.1
	80+	15	3.9
Education	Illiterate	234	60.9
	Primary	50	13.0
	Secondary	45	11.7
	Matriculation	34	8.9
	Intermediate	7	1.8
	Bachelors	8	2.1
	Masters	5	1.3

Question	Categories	N	%
	Others	1	.3

Table 1 highlights the percentiles of background indicators of the present study, which includes sex, age distribution, and educational attainments of older persons. Percentiles of sex indicators reveal the 70.1percent participation of male older persons and 29.9percent older females participated. Additionally, age was divided into five interval categories ranging from 60 years of age to 80 and above. In the age category of 60-65 years, the older person's participation was 53.9percent and observed as the highest percentage. The participation of older persons decreases as the age increased and, in the 80 plus category, only 3.9percent of responses were recorded. Educational achievement of study respondents shows that 60.9percent of the elders had zero schooling or illiterate. The primary class was recorded 13.0percent cases, secondary in 11.7percent cases, 8.9 percent matriculation and, only 1.3percent were having a Master's degree.

Table 2. Disease Outline and Elder's Education

Qualification	Disease Outline				
	Hypertension	Heart Problems	Diabetes	Arthritis	Asthma
Illiterate	61.3%	57.1%	65.5%	63.0%	88.9%
Primary	9.7%	14.3%	10.3%	18.5%	7.4%
Secondary	12.9%	20.4%	6.9%		
Matriculation	12.9%	4.1%	8.6%	7.4%	3.7%
Intermediate	3.2%		5.2%	3.7%	
Bachelors		2.0%	1.7%	7.4%	
Masters			1.7%		
Others		2.0%			
Total	100.0%	100.0%	100.0%	100.0%	100.0%

The above table represents the comparative relationship between "current disease outline" and their "education of older persons" at the time of research. The relationship highlights the distribution of the disease profile according to the qualification of older persons. Hypertension data shows the highest percentile was reported among illiterate elders of Rawalpindi. The trend is the same in the case of Heart problems, Diabetes, Arthritis, and the prevalence of Asthma among older persons. Hypertension contour among illiterate older persons was 61.3percent; Heart problems were 57.1percent, Diabetes was recorded 65.5percent, 63.0percent, arthritis was observed and, Asthma was at a peak with 88.9percent. Percentiles of the same diseases in other education categories were much better than illiterate older persons. In the case of Diabetes, it started from illiterate elders of Rawalpindi with 65.5percent and consistently appeared in every category of education, excluding others that comprise *Madarassa* or *Maktab* education.

Table 3. Elder's Education and Disease Profile

	Do you have any of the following diseases?						
	Hypertension	Heart Problems	Diabetes	Arthritis	Asthma	Other	NA/ No disease
Illiterate	8.1%	12.0%	16.2%	7.3%	10.3%	20.1%	26.1%
Primary	6.0%	14.0%	12.0%	10.0%	4.0%	30.0%	24.0%
Secondary	8.9%	22.2%	8.9%			22.2%	37.8%
Matriculation	11.8%	5.9%	14.7%	5.9%	2.9%	26.5%	32.4%
Intermediate	14.3%		42.9%	14.3%			28.6%
Bachelors		12.5%	12.5%	25.0%		37.5%	12.5%
Masters			20.0%			40.0%	40.0%
Others		100.0%					
	8.1%	12.8%	15.1%	7.0%	7.0%	22.4%	27.6%

In Table 3, an effort was made to explain the relationship between education and disease profile, while in table 2, it was between health profile and educational achievement. The title is almost the same, but the distribution of percentile is different. From the total number of illiterate older persons, 8.1percent reported hypertension, 12 percent were living with Hypertension, Diabetic elders were 16.2percent and, Arthritis and Asthma were reported 7.3percent and 10.3percent cases. In the Primary and secondary qualification category, the major disease is Heart problems [14% & 22.2%]. Diabetes is reported highest among intermediate degree holder elders, and that is 42.9percent. Data also shows that 8.1percent of the total respondent's having hypertension, 12.8percent facing Heart problems, 15.1percent having Diabetes and, 7percent reported Arthritis and Asthma.

Regression Analysis

$y = \beta_0 + \beta_1 x + e$

Y = Dependent Variable = Disease profile of older persons

β_0 = $Intercept$

β_1 = $Slope$

x = Independent variable= Qualification of older persons

e =Error **or residual.** Represents the unexplained variation in the target variable

$y = 5.0749 + .0646x$

Table 4

Regression Statistics	
Multiple R	0.035853
R Square	0.001285
Adjusted R Square	-0.00133
Standard Error	2.545796
Observations	384

Table 5

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	5.074929	0.218271	23.25061	3.83E-75	4.645766	5.504091	4.645766	5.504091
Education	0.064607	0.092138	0.701196	0.483608	-0.11655	0.245767	-0.11655	0.245767

Health is a significant element of active, healthy ageing, and it is very much prominent that the health consequences of older peoples are both outcomes of their life skills along with their individual and societal conditions in old age. The majority of the researches on the connection between education and health has been concentrating on North America and European countries, but there are growing digits of researches explore this relationship in another world, comprising Asian countries (Loichinger & Pothisiri, 2018).

No significant study was found that deals specifically with the relationship between education and disease prevalence among older persons. Rather some studies highlight the inter-relationship of education and functional disability, education and mortality and, education and self-rated health from an Asian perspective. As Son et al. (2002) explain in their investigation of the association of professional class and formal education with mortality rates in South Korea that a statistically significant +ve correlation among the education level and death persisted after controlling age, sex and, occupational class. If we look at Taiwan, Zimmer et al., (1998) inquiry of elders exposed that higher level of education dropped the frequency of experiencing functional limitations and abilities; with no significant influence on recovering capabilities, formerly functional limitations were already present. While in the situation of Indonesia, the no significant relationship between education and self-rated health of elders aged 60years and above after controlling certain variables (Thristiawati et al., 2015). Though, the sub-sample exploration of Javan-migrants presented that education influence meaningfully more possibly to report self-rated good health among secondary education degree holder as compared to those having primary education. In a recent study, Loichinger & Pothisiri (2018) stated that one single country research with health projections for Singapore that exclusively deals with educational achievement is the analysis by Ansah et al. (2015).

Regression results of the present study unveil that a relationship exists but non-significant among the formal education level of older persons and their disease prevalence rate. The regress model exposes the minor effect of the independent variable [education] on the dependent variable [disease profile] of older persons. Value of R^2 is .0013 and the slope of the regress model is .0646, which means if we increase one value of the independent variable, there is a minor change that occurred in the health status of elderly people. A lower R Squares shows data is not a good fit. The result shows that each distinct variable has some relationship with the dependent variable. We conclude, due to multicollinearity, the regression on individual variables may be insignificant while the coefficient as a whole is significant under this specific condition.

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