What makes them feel healthier? the correlates of self-perceived health among older adults in India

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What makes them feel healthier? the correlates of self-perceived health among older adults in India[1]

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Abstract

The physical, the mental and the social well-being constitute the health of an individual and a population in general. For populations passing through demographic transition, the life expectancies at various ages show an increasing trend over time. To ensure healthy ageing, in such populations, the later part of the life span of an individual should be free from chronic diseases and impairments. In this context, the prevailing health scenario is best measured in terms of the disease free life expectancies and the disability free life expectancies. At the individual level, the number of diseases and the number of impairments one suffers from give an account of his/her health. Besides these objective measures of health, the self-perceived health (also called the self-reported health) has received due attention in recent literature. This is due to its strong association with the life expectancy on one hand and with the future state of health on another. Moreover, including self-perceived health (SPH) in accounting for an individual's health is akin to giving him/her a say in his/her assessment of own health. Furthermore, it is opined that SPH captures those hidden aspects of health that go unnoticed otherwise. The present study investigates the socioeconomic factors associates with the SPH for the older adults in India. Data pertaining to two sample surveys with a country-wide coverage (the 52nd and the 60th round of the National Sample Survey) of the older adults have been made use of for this purpose. SPH is usually measured on a 3-5 point ordinal scale in a relative perspective (comparing the present state of health with the state of health in an earlier reference period) or in a global perspective (absolute statement about the present state of health). The present study models the SPH (in a global perspective), measured on a 3-point

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ordinal scale, for its association with the immediate socioeconomic environment of the older adults using an ordinal logit regression model. The immediate socioeconomic environment of an older adult consists of the living arrangements, the financial dependence, the marital status, the number of children, the economic status of the household, the caste, the religion and the geographic region. Further, these associations have been studied after controlling for the objective measures of health, namely, the diseases, the impairments, the immobility and the relative state of health. The results indicate that the objective measures of health (the severity of immobility, the number of impairments and the number of diseases) and the relative change in the state of health during past one year contribute maximum to the information on the perception of the present state of health. This is quite obvious. Although, the information provided by immediate socioeconomic environment is lesser, it is not insignificant. SPH was found better for more educated older adults. The financial dependence and poor status of the household reduce the chances of better SPH. On the other hand co-residence and large sized households increase the chances of better SPH. The older adults in rural areas are less likely to perceive a better health status when compared to their urban counterparts. It is quite obvious from the findings that SPH, which is an indicator of the future state of health, is found to be associated not only with the present state of health but also with the prevailing socioeconomic conditions of the older adults. The solution to better health, thus, has socioeconomic components that need appropriate and timely redress.

keywords: ageing, India, older adults, self-perceived health

Introduction

Human beings age and so do populations. An ageing population is characterised by a sizable proportion of older adults. Unlike the non-older adults in a population, most of the older adults are retired from active economic life, prevalence of chronic health conditions are common, a change in marital status from married to widowhood is quite possible and they may be dependent on others for care and sustenance. These conditions make them a group distinct from the rest of the population. Therefore, when one looks at this group from the perspective of quality of life, health emerges as an important integrant of this perspective.

Addressing the issue of the health of older adults requires a clear cut understanding of the meaning of the term *health*. Nevertheless, it is widely accepted that *health* is too a multidimensional concept to adhere to a pin-point definition. However, the definition provided by the World Health Organisation that incorporates the physical, the mental and the social well being serves the purpose well. The dimensions or aspects of health can be conceptualised as morbidity, impairments (that lead to disability and functional limitations) and self-perceived health (SPH). The former two aspects are objective formulations whereas the latter aspect is a purely subjective concept. Its salience has grown over time and there are reasons for that. Firstly, there is a recognition of the need to give weight to a persons own perception of his/her health along with the objective indicators of health in health related studies. Equally important is the strong association that this indicator has been found to have with the future mortality and future functional status; although, other two indicators also have a strong association with mortality lee,1999 has cautioned not to look health only in terms of mortality.

SPH is measured on a 2, 3, 4 or 5 point ordinal scale either in a global perspective or in a relative perspective. Though simple to measure, the SPH has been criticised for being culture specific and that each person has a different frame of reference while assessing his/her state of health. Nevertheless, its consistency that the lower states indicate high risk of future mortality is universal and that makes it appealing in health related studies. In other words, this measure not only incorporates the objective state of health but also what cannot be measured by these objective states. According to Jylhä, 2009 the SPH is "crossroad between the social world and psychological experiences on one the hand and the biological world on the other."

Similar to the social determinant of health there is a social perspective to the self related health. The immediate social environment constitutes of the living arrangements of older adults, their marital status, the number of children, their economic dependency, rural/urban place of residence and the economic status of their household. The caste, region and religion constitute the next immediate environment that may guide their perception about health.

The present investigation is inspired by the increasing importance of self perceived health in the health related quality of life. At present the nationwide information on the socioeconomic state and status of health of older adults in India is available in the three rounds of the National Sample Survey conducted during 1985-86, 1994-95 and 2005. The latter rounds contain information on the self-perceived health also. There had been a few studies concerning the social aspects associated with the health of older adults. The studies on self-perceived health are lacking. Considering the increasing share of older adults in the demographic space of India and the concern for their well being such investigations are warranted.

It is obvious that perceptions regarding health are modelled by the present state of physical health. Never the less, such studies are of potential interest to the social policy makers as they can establish how social factors contribute to self-perceived health that is an integral component of health related quality of life (HRQoL).

Conceptual framework

The missing values have been imputed assuming a Poisson distribution of the count of chronic diseases needing diagnosis. The improvement in status of health has been taken as an additional indicator of health.

The older adults were asked to rate their health on a 5 point ordinal scale. Due to low frequency in the lowest and highest categories these categories were collaged with their next higher/lower categories respectively. Eventually, the variable measuring perception about health is ordinal with three states namely poor, good and excellent representing an ascending order of sound health. It is assumed that on an underlying scale that measures the perception about health there is a threshold T_2 above which an older adult perceives his/her health as *excellent* (figure 1). There is another threshold T_1 ($T_1 < T_2$) below which an older adult perceives his/her health as *poor*. In between T_1 and T_2 he/she perceives his/her health as *good*. Letting p_1, p_2 and p_3 denote the probabilities that an older adult perceives his/her health as poor, good and excellent respectively. The model associating the probabilities of perception about state of health and various potential factors is given by the following ordinal logit model

$$\ln\left(\frac{p_2 + p_3}{p_1}\right) = \alpha_1 + \sum_{i=1}^{k} \beta_i x_i$$

$$\ln\left(\frac{p_3}{p_1 + p_2}\right) = \alpha_2 + \sum_{i=1}^{k} \beta_i x_i + \sum_{i=1}^{k} \gamma_i x_i$$

where, β_i is the effect of factor x_i. Let the odd $\frac{p_2 + p_3}{p_1}$ be denoted by O_1 and the odd $\frac{p_3}{p_1 + p_2}$ be denoted by O_2. In case the effect of x_i is identical for the two odds (O_1 and O_2) γ_i is 0 (the proportional odds assumption). The deviation from the proportional odds assumption is reflected in the non-zero values of $\gamma_i's$.

Findings

The association between the self perceived health and various potential associated factors is studied for two reference periods namely 1995-96 and 2005. The detailed results are presented in the table 1. It is clear form the analysis of the pseudo R^2 that the objective measures of health (the severity of immobility, the number of impairments and the number of diseases) and the relative change in the state of health during past one year contribute maximum to the information on the perception of the present state of health. This is quite obvious. Although, the information provided by other factors such as individual, household and social characteristics is small, it is not insignificant.

The perception of good or excellent state of health (not-poor) vs. the perception of poor state of health

Among the older males and the older females, the likelihood of perceiving health as *good or excellent* reduces with increase in the severity of immobility, the number of impairments, the number of diseases and the age. The association between the perception about the relative state of health and the current state of health figures out prominently. Among the older females, the odds in favour of the perception of *good or excellent* health increase monotonically in the order as 6.64, 35.89, 68.65, and 98.40 times for the states of the relative state of health namely, somewhat worse, nearly the same,

somewhat better and much better respectively. This indicates that the changes in the status of health during an immediately preceding reference period have a lot to say about the perception about the current state of health. The corresponding values for older males are 9.68, 53.70, 77.14 and 139.62 respectively.

Education affects the perception about health in a way that the illiterate and the below-matriculates among the older adults are less likely to perceive their health as *good or excellent* when compared to the higher-educated ones. In other words higher education implies better perception about sound health. A change in marital status from married to widowhood/widowerhood is a likely phenomenon. Among older males the odds in favour of perceiving *good or excellent* state of health are more by 1.16 times among the widowers than their currently married counterparts. In contrast, among the others (never married/divorces/separated) the odds in favour of *good or excellent* state of health are lesser by 0.58 times when compared to their married counterparts. Such association between the marital status and perception about health is not visible among the older females.

Economic condition, individual (economic dependence on others) and household (the economic stratum a household belongs to) influence the perception about health in a significant way. The older adults who are completely dependent on others are less likely to perceive a *good or excellent* state of health when compared to their not-dependent not-supporting counterparts. This effect is more felt among older males (0.61) when compared to the older females (0.74). Interestingly, among the older males, those who are economically supporting others are 1.65 times more likely to perceive health as *good or excellent* when compared to the ones who are not-dependent and not-supporting.

The household economic conditions are found to be directly associated with the perception of sound health. When compared to the highest economic stratum (the fifth quintile) the odds of perceiving

good *or excellent* state of health reduce by 0.96, 0.89, 0.68 and 0.59 times among older females as one move from the fourth to the first quintile. The corresponding figures for the older males are 0.88, 0.71, 0.71 and 0.56 respectively.

Living alone lowers the likelihood of perception of *good or excellent* health by 0.86 times among older females and 0.77 times among older males when compared to living as a co-resident. Even here, the relative decrease is more for older males when compared to older females. It is also observed that during the earlier reference period (1995-96) the likelihood of the perception of *good or excellent* health did not differ with respect to the living arrangements. In addition to living arrangements, the size of the household plays a significant role in making older adults feel healthier. The odds in favour of the perception of *good or excellent* health increase by 1.03 times for older males and 1.04 times for older females with each unit increase in the size of the household.

The place of residence, caste and region also has significant variations with respect to the perception of health. Older adults residing in rural areas are less likely to perceive their health as *good or excellent* when compared to their urban counterparts. The older adults belonging to scheduled tribes are more likely to perceive a state of good *or excellent* health whereas the older adults belonging to the scheduled castes are less likely to do so when compared to the older adults belonging to the general castes.

The perception of excellent health vs. the perception of poor or good (not-excellent) health

The effects for the log odds $\ln(\frac{p_3}{p_1 + p_2})$ are similar to the log odds $\ln\left(\frac{p_2+p_3}{p_1}\right)$ but for a few independent variables. Among the older females, the odds in favour of perceiving health status as *excellent* reduce by 0.38 times with a unit increase in number of diseases. Another feature among the older females is that the lesser the economic status of their households the less likely they perceive their health status as excellent. Those who report relative improvement in health status as *much better* are 1074.92 times more likely to report excellent health than those who report the relative improvement in health status as *worse*.

Unlike among the older females, the effects for the two log odds differ for impairments, perception about relative state of health, individual characteristics, region and caste among older males. The odds in favour of perceiving the health status as excellent reduce by 0.34 times with a unit increase in the number of impairments. The role of change in relative state of health over the past one year is evident. Those older males, who experienced *nearly the sam*e, *somewhat better* or *much better* state of health, when compared to their health a year ago, are respectively 11.94, 16.44 and 139.77 times more likely to report their health as excellent when compared to those older males whose health has deteriorated to worst.

The negative effect of increasing age evident as with each year of increase in age the odds in favour of perceiving health status as excellent reduce by 0.62 times. Illiterate older males are also less likely to perceive their health status as excellent as their matriculate counterparts. The economic dependency and the number of children also reduce the chances of perceiving an *excellent* status of health.

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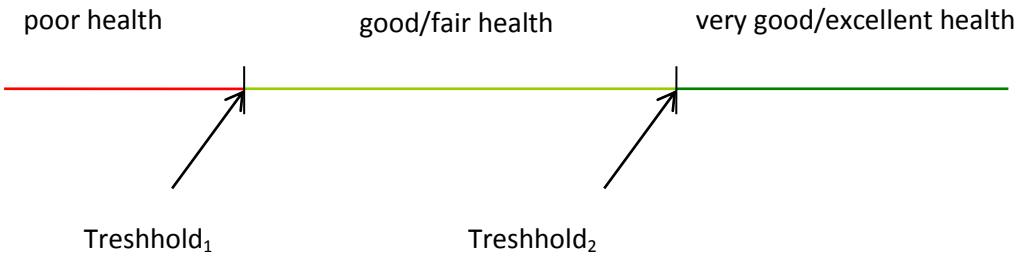

Figure 1

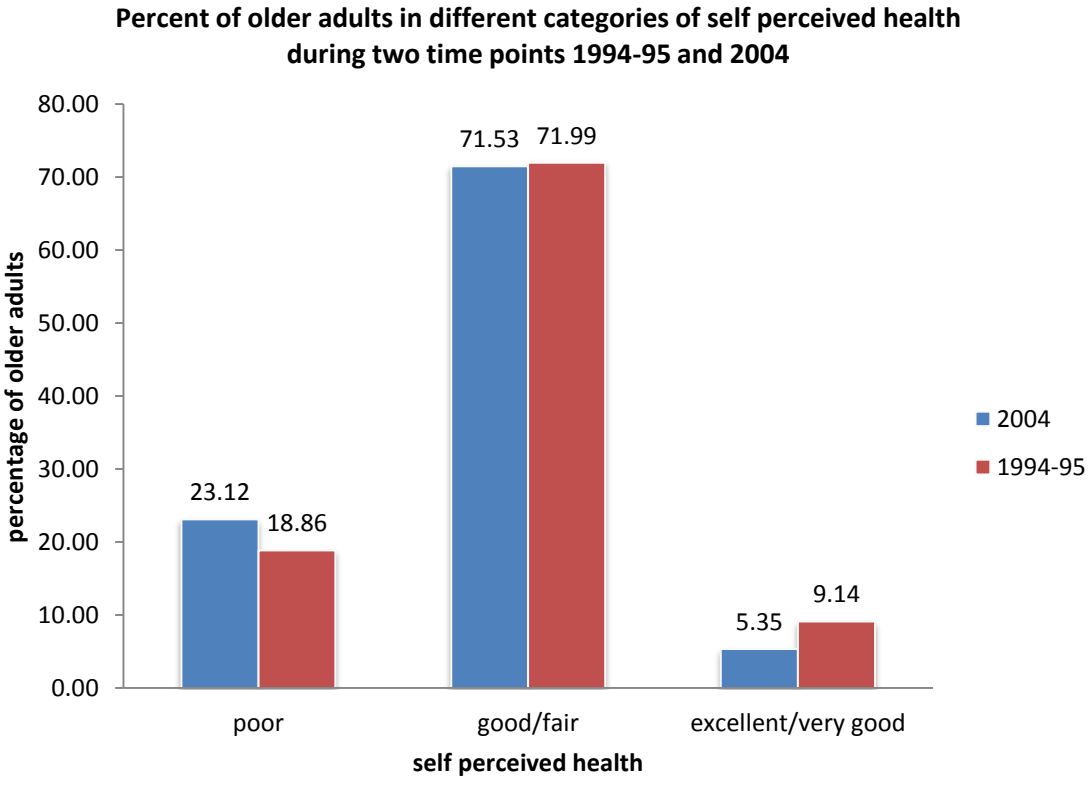

Figure 2

Table 1

	2004			1994-95		
	effect (p-value)	**95% C.I. for effect**	**Odds ratio**	**effect (p-value)**	**95% C.I. for effect**	**Odds ratio**
threshold						
poor	**-8.58(0.00)**	**(-9.01 , -8.15)**		**-10.42(0.00)**	**(-10.91 , -9.93)**	
good/fair	**-3.31(0.00)**	**(-3.72 , -2.90)**		**-4.85(0.00)**	**(-5.32 , 4.39)**	
Variables						
Immobility						
severe	**-2.36(0.00)**	**(-2.73 , -1.99)**	**0.09**	**-1.89(0.00)**	**(-2.23 , -1.56)**	**0.15**
partial	**-1.59(0.00)**	**(-1.72 , -1.46)**	**0.20**	**-0.99(0.00)**	**(-1.11 , -0.87)**	**0.37**
no difficulty®						
Impairments	**-0.60(0.00)**	**(-0.68,-0.53)**	**0.55**	**-0.31(0.00)**	**(-0.35 , -0.28)**	**0.73**
Chronic Diseases	**-0.75(0.00)**	**(-0.80,-0.69)**	**0.47**	**-0.46(0.00)**	**(-0.49 , -0.43)**	**0.63**
Perception about the Relative State of Health						
worse	**-6.44(0.00)**	**(-6.82 , -6.06)**	**0.00**	**-7.55(0.00)**	**(-7.90 , -7.20)**	**0.00**
somewhat worse	**-4.32(0.00)**	**(-4.49 , -4.15)**	**0.01**	**-5.15(0.00)**	**(-5.39 , -4.90)**	**0.01**
nearly the same	**-2.60(0.00)**	**(-2.75 , -2.44)**	**0.07**	**-3.24(0.00)**	**(-3.48 , -3.01)**	**0.04**
somewhat better	**-2.15(0.00)**	**(-2.33 , -1.97)**	**0.12**	**-0.75(0.00)**	**(-1.00 , -0.49)**	**0.47**
much better ®						
age	**-0.04(0.00)**	**(-0.04 , -0.03)**	**0.96**	**-0.03(0.00)**	**(-0.04 , 0.03)**	**0.97**
Level of Education						
Illiterate	**-0.31(0.00)**	**(-0.44 , -0.17)**	**0.74**	**-0.39(0.00)**	**(-0.54 , -0.24)**	**0.68**
below matriculation	**-0.17(0.01)**	**(-0.30 , -0.04)**	**0.84**	**-0.18(0.02)**	**(-0.33, -0.04)**	**0.83**
Matriculation and above®						
Gender						
male	**0.00(0.98)**	**(-0.08 , 0.08)**	**1.00**	**-0.32(0.00)**	**(-0.40 , -0.24)**	**0.72**
female®						
Marital Status						

Others	**-0.41(0.02)**	**(0.12 , 1.10)**	**0.66**	**-0.21(0.22)**	**(-0.56 , 0.13)**	**0.81**
Widowed	**0.02(0.60)**	**(-0.05 , 0.09)**	**1.02**	**-0.10(0.01)**	**(-0.17 , -0.03)**	**0.90**
currently married®						
Dependence						
dependent	**-0.71(0.00)**	**(-0.79 , -0.63)**	**0.49**	**-0.80(0.00)**	**(-0.89 , -0.71)**	**0.45**
partially dependent	**-0.39(0.00)**	**(-0.49 , 0.29)**	**0.68**	**-0.36(0.00)**	**(-0.46, -0.26)**	**0.70**
not dependent						
Household Economic Condition						
first quintile	**-0.58(0.00)**	**(-0.68 , -0.47)**	**0.56**	**-0.61(0.00)**	**(-0.72 , -0.50)**	**0.54**
second quintile	**-0.37(0.00)**	**(-0.47 , -0.28)**	**0.69**	**-0.37(0.00)**	**(-0.47 , -0.26)**	**0.69**
third quintile	**-0.27(0.00)**	**(-0.36 , -0.17)**	**0.77**	**-0.16(0.00)**	**(-0.26 , -0.06)**	**0.85**
fourth quintile	**-0.12(0.01)**	**(-0.22 , -0.03)**	**0.88**	**-0.21(0.00)**	**(-0.31 , -0.11)**	**0.81**
fifth quintile®						
Living Arrangements						
Alone	**-0.42(0.00)**	**(-0.51 , -0.34)**	**0.65**	**-0.32 (0.00)**	**(-0.42 , 0.22)**	**0.73**
co-residence®						
Place of Residence						
Rural	**-0.29(0.00)**	**(-0.37 , -0.21)**	**0.75**	**-0.19(0.00)**	**(-0.27 , -0.10)**	**0.83**
Urban®						
Model χ^2 (d.f.)		**9878.20 (22)**			**12993.61 (22)**	
(p-value)		**(0.00)**			**(0.00)**	
Pseudo R^2(Nagelkerke)		**0.395**			**0.490**	

note 1:p-value corresponds to the test of hypothesis that the corresponding effect is 0 against the alternative that it is not zero