

Impact of old age allowance on health-related quality of life among elderly persons in Bangladesh

AKM Masud Rana^{1,2}
Syed Masud Ahmed²

Corresponding author: AKM Masud Rana: email: Rana.Akm.Masud@ki.se

1. Aging Research Center, Gävlegatan 16 (9th floor), Karolinska Institutet, Sweden

2. Research and Evaluation Division, BRAC, 75 Mohakhali, Dhaka 1212

Abstract

This study examines the impact of small-scale old age allowance (per capita US\$3 per month in cash) on health-related quality (HRQoL) of life of elderly persons initiated by the government of Bangladesh in 1998. The beneficiaries have been increased from 0.5 million in 1998 to 1.6 million in 2006. A cross-sectional study was conducted in 10 of the 64 districts of Bangladesh including 4,498 elderly persons (≥ 60 years) where BRAC has been maintaining a demographic surveillance. HRQoL was assessed using a multi-dimensional generic instrument. Multivariate analyses revealed that receiving old age allowance was significantly associated with attaining higher scores in the social and economic dimensions and lower scores in the physical dimension of HRQoL compared to the eligible non-beneficiaries (adjusted for sex, age, education and marital status). A significant impact of old age allowance on some specific dimensions of HRQoL albeit small, justifies its continuation and expansion to bring more individuals in its net.

Key words: old age allowance, poor, Bangladesh

Introduction

The World Bank Group defines cash transfer as the provision of assistance in the form of cash to the poor or to those who face probable risk, in the absence of the transfer, of falling into poverty. Cash transfer is a social assistance given to individuals, as distinct from the communities (Farrington & Slater 2006). This is also defined as public action to protect the poor and vulnerable from adverse changes in living standards (Ahmad, 1991). Research indicates that cash transfer impacts on level of poverty and vulnerability of the recipient households, facilitates access to essential health care services as well as improves intra-household relationship (Lloyd-Sherlock, 2006). Recent research demonstrates that cash transfer reduces households' probability of becoming poor by 21% in Brazil and 11% in South Africa (HelpAge, 2006). Evidence shows that cash transfer impact not only among the beneficiaries also it impacts on the lives of fellow household members. In South Africa for instance, drop out rate of student was reduced and improved nutritional status of children in the beneficiary of cash transfer households. Hence, cash transfer has increasingly become popular in many countries for reducing poverty (Jones et al., 2007).

Although formal social assistance has significant effects on the lives of the beneficiaries, however, globally this is offered in a limited scale due to constraint of resources. In low-income countries provision of social assistance is substantially negligible. Hence, 70% of the world population, eligible for social security assistance rely on informal social security assistance (World Bank, 1994). Evidence shows that extended family system has been gradually declining in low-income countries which have important repercussion on the lives of elderly persons. Thus, the plight of elderly persons needs to be addressed in the development discourse formally (Senior Citizen, 2007).

Bangladesh is a low-income country where 36% people live below poverty line. With a small geographical area (147,570 square kilometres) the total population of the country is about 147 million. Of these, 8 million are elderly persons 60 and above year old (Bangladesh Bureau of Statistics, 2006). Although this segment of population is huge in terms of numbers, social security assistance for elderly persons was missing till late nineties in the formal sector. It is worth noting that unlike government employees there was no provision of life-long formal social security assistance as means of cash transfer for the elderly persons. In 1998, the cash transfer scheme known as old age allowance (*Boioshko bhata*) was introduced for the poor elderly persons, which is provided from the government revenue. The total allocation of old age allowance is 0.03% of the gross-domestic products (HelpAge International, 2008). An encouraging feature is that since its inception beneficiaries have been increased from 0.5 million in 1998 to 1.6 million in 2006. Although a decade ago provision of social security assistance came into effect however, the provision of focused health care for elderly persons is till missing in the formal health care sector. Research indicates that in old age various illness are highly prevalent and co-morbidity is common feature (Ahmed et al., 2005; Kabir et al., 2003). Importantly, absence of health care of elderly persons in the formal sector may have negative impacts on their health status especially among the poor because due to financial paucity they will abstain from health care during illness.

To our knowledge, since the commencement of old age allowance scheme in Bangladesh, no population-based study was conducted to examine the impact of old age allowance on health-related quality of life or other indicators. The aim of the study is to examine the impact of old age allowance on health-related quality of life based on specific six dimensions. Furthermore,

association of other socioeconomic and demographic indicators with health-related quality of life were examined.

Materials and methods

Study settings

This cross-sectional study was conducted in 10 of the 64 districts of Bangladesh where BRAC (formerly known as Bangladesh Rural Advancement Committee), a non-governmental organization has been maintaining a demographic surveillance system since 1995 in 52 villages. The key feature of the sampling frame is that at least one sub-district (*upazila*) represents from each of the six administrative divisions of the country which is geographically representative (Ahmed et al., 2004).

Sample

All the elderly persons (≥ 60 years) irrespective of men and women were sampled for this study totalling 4,498 elderly persons. Of these 3,831 elderly persons could be interviewed. Non-response rate was 15%.

Instrument used for assessing Health-related quality of life (HRQoL)

Health-related quality of life (HRQoL) was measured based on 24 items distributed across six dimensions. This instrument was developed based on the review of existing instruments and qualitative study (Nilsson 2005). This review demonstrated that suitable instrument for elderly persons especially for low-income countries are not available. Hence a new generic instrument was developed and proposed for assessing HRQoL of elderly persons. Initially the instrument was developed in English and later it was translated into *Bangla* the official language in Bangladesh and mother tongue of most of the Bangladeshi people. To examine whether the translation from English to *Bangla* was done correctly back translation was done further. This

process indicates that translation was done appropriately. In a while the instrument was pre-tested for ascertaining consistency, appropriateness of languages, sequencing of the questions, and to have an insight into the field operation procedure. These were then edited in the light of feedback received. The reliability of the instrument was confirmed by Cronbach's Alpha, which was 0.87, indicating high reliability of the instrument.

Data collection

The field investigators were given weeklong hands on training about all the domains of the questionnaires and procedures of data collection. Principal investigators conducted the training of field investigators. The study passed through the usual institutional review process at BRAC Research and Evaluation Division (<http://www.brac.net/research>) for ethical approval. Data were collected through face-to-face interview at the home of the study participants by the field investigators after obtaining informed verbal consent. In obtaining informed consent the participants were informed about the objectives of the study and their autonomy to discontinue at any point of the data collection and given assurance that data will be analysed anonymously and confidentially.

A field investigator from each team was assigned as team leader for supervision of the data collection activities over and above own scheduled data collection, and 40% of the time of team leader was earmarked for this. Besides, the field investigators cross-checked each others filled-in questionnaires at the end of the day. Households were visited on two repeated occasions at intervals, if the first attempt was not successful due to absence of the respondents. When these repeated attempts failed, the interview was called-off for the particular respondent.

To ensure quality of data five independent monitors were employed to oversee the field activities and to ensure that the data collection was performed as instructed. The monitors

checked all the filled-in questionnaires at the field stations where field investigators stayed during data collection. If inconsistent and missing information found in any questionnaire, re-interview was done to make a correction for the inconsistencies and to collect the missing information. This was possible as the field investigators resided nearby the study areas. The principal investigators supervised the overall data collection activities.

Intervention

The government supported cash transfers scheme known as old age allowance (*Boiosko bhata*) has been offered for the past decade among the poor elderly persons who are ≥ 60 years old in rural Bangladesh. In 2007 this scheme has been expanded to poor elderly persons in urban areas also. Due to limited resources, in selecting the beneficiaries preference is given to the oldest, physically incapable, sick and person having yearly income less than taka 3000. Per capita allocation is about US\$3 per month. The allowance is disbursed quarterly in cash through commercial banks. An encouraging feature of this scheme is that over the years both the number of beneficiaries (from 0.5 million to 1.6 million) as well as per capita allocation have been increased (from US\$2 in 1998 to US\$3 in 2006). However, due to the paucity of resources, yet substantial numbers of eligible elderly persons remained out of this scheme.

Outcome of interest

The outcome of interest consists of six dimensions of HRQoL i.e. physical, psychological, social, spiritual, economic, environment and overall HRQoL scores. Physical and psychological dimensions represent five questions from each dimension respectively. Social dimension consists of six questions. Spiritual and economic dimensions represent two questions from each dimension respectively. Environment dimension consists of four questions. Finally, overall HRQoL is based on the scores of all six dimensions. The range of scores is 5-20 for physical and

psychological dimensions, 6-20 for the social dimension, 2-8 for the spiritual and economic dimensions and 4-16 for the environment dimension. Except for the 2 items in the social dimensions the range of scores for each item was 1-4. However, the range of scores for the two items in the social dimension is 1-2. The highest scores indicate better status of HRQoL (for detail see Nilsson, 2005).

Explanatory variables

The explanatory variables include age, sex, education, marital status. Educational status was categorized into two groups such as illiterate and literate. Illiterate was considered, when individual reported that they couldn't read or write *Bangla* language. Marital status was categorized as married and single. Married group comprised currently married individuals while single group comprised widows, widowers, divorced, unmarried and abandoned. Current occupation of the respondents was divided into paid and unpaid work. Paid work was considered when individual reported that they involved in any income earning activities. On the other hand, unpaid work represents persons who did not involve in any income earning activities such as old, unable to work, unemployed and performed household work.

Analyses

Both bi-variate and multivariate analyses such as chi-square, independent t tests were done to examine the group level differences in terms of socio-economic and demographic indicators and HRQoL scores. Linear regressions were performed to examine the predictors of health-related quality of life (HRQoL). In the linear regression analyses seven models were constructed. The first six models represent each specific dimension respectively and the last model consist of overall HRQoL.

Results

Profile of the study participants

Table 1 shows that the beneficiaries of old age allowance and eligible non-beneficiaries were comparable except mean age and occupation: the beneficiaries were older and more frequently involved in unpaid work than their counterpart. It also indicates that the beneficiaries of old age allowance were significantly different than the non-eligible elderly persons in all the indicators such as age, education, and marital status.

Health-related quality of life (HRQoL) of elderly persons (≥ 60 years old) across the groups

Table 2 shows that the beneficiaries attained significantly higher scores in the social and economic dimensions. On the other hand, eligible non-beneficiaries attained significantly higher scores in the physical and psychological dimensions. In the spiritual and environment dimensions as well as overall HRQoL scores no significant difference was observed between the two groups. To note, non-eligible participants attained significantly higher scores in all the dimensions and overall scores compared to both the beneficiaries and eligible non-beneficiaries.

Association of health-related quality of life with various socioeconomic indicators

Table 3 shows that men attained significantly higher scores in the physical, psychological, social, economic, environment dimensions and overall scores. However, participant in the higher age group attained significantly lower scores in the physical, psychological, social, environment and overall scores. Interesting to note that, the literate persons attained significantly higher scores in all the dimensions and overall scores. Currently married participants attained significantly higher scores in the physical, psychological, social, environment and overall scores. Elderly persons who involved in paid work attained significantly higher scores in five dimensions and overall scores except in the spiritual dimension compared to persons involved in unpaid work.

Multiple linear regression analyses examining predictors of health-related quality of life among beneficiaries and eligible non-beneficiaries

Table 4 show that being a woman was negatively associated with lower scores in the physical, psychological, social, environment dimensions and overall scores and positively associated with spiritual dimension scores only. Advanced age significantly predicted lower scores in the physical, psychological, social, environment and overall scores. A significant positive association of literacy was noted in all the dimensions and overall HRQoL scores. It also shows that being a beneficiary of old age allowance was significantly associated with higher scores in the economic and social dimensions while significantly lower scores in the physical dimension. The total variation across dimensions (R^2) accounted for by the explanatory variables ranged between 1.2%-9.7%.

Discussion

This study examines the impact of old age allowance on health-related quality of life of elderly persons. Findings revealed that being a beneficiary of old age allowance was significantly associated with higher scores in the economic and social dimensions of HRQoL. A significant positive impact of old age allowance on health-related quality of life might be due to fact that this assistance allows beneficiaries to contribute economically into the household. Research indicates that in low-income countries the majority of elderly persons live in extended family (Kabir et al., 2003) and majority of them involved unpaid work (Rana et al., 2008). Findings of this study also indicated that most of the study participants involved in unpaid work, as a result financial hardship is pervasive among this group. Thus having any amount of financial assistance in later life especially among the poor might have indispensable upshot on their lives.

Importantly, an improvement of the social dimension among the beneficiaries has of vital repercussion in a society where majority of the elderly persons live with inter-generational family members. It might be worth noting that the domain of social dimension comprised questions related to decision making role in the household, relationship with the households' member and neighbours. Research shows that in low-income countries such as Bangladesh elderly persons depends on co-residing members for various material, social and emotional supports (Kabir, 2001). Hence improvement in social dimension has an important implication in order to enhance the lives of the elderly persons.

This study also showed that this regular financial support brought a positive change in the economic dimension of HRQoL, which is likely as this assistance allows them to have some cash in hand regularly. It can be argued that as the beneficiaries receive a financial assistance in a regular interval it will have an impact on their lives which is usual. However, here the main point

is that this scheme allows having a small amount of money which, the beneficiaries can leverage diverse benefits in the households where they reside. Furthermore, such financial support plays an important role for lone elderly persons as money can be used for health care, food and clothes. Even in some instances when the elderly person resides into extended family, money can be used for other purposes such as children's education, food or clothes. These may act indirectly through enhancement of emotional support and care of the elderly persons.

Unlike social dimension, a significant negative association in the physical dimension among the beneficiaries might be due to representation of higher proportion of vulnerable among the beneficiaries in terms of chronological age and less involvement in income earning activities compared to the eligible non-beneficiaries. This differential profile between two groups might have contributed in attaining lower scores among the beneficiaries and higher scores among the eligible non-beneficiaries in the physical dimension, which is likely. Earlier research also found that physical status deteriorates with advancing age (Nilsson, 2005).

It might be worth noting that during the selection process of old age allowance beneficiaries more vulnerable such as persons with advanced age and persons who involved in unpaid work usually get priority. Hence, a dissimilar socioeconomic and demographic profile is likely between beneficiaries and eligible non-beneficiaries. However it is interesting to note that such a prioritization allows increasing the access of higher proportion of vulnerable in this programme. The representation of higher proportion of vulnerable among the beneficiaries is commendable and signifies transparency of selection process (Research and Evaluation Division, 2008). Evidence exists that in many places owing to mis-targeting many eligible beneficiaries are excluded from such social assistance programmes (Arulpragasam 2008).

Association of educational status in all the dimensions and overall scores indicates that educational status is an important indicator to have better health-related quality of life in old age. Consistent with earlier research (Nilsson, 2005) a significant positive association with HRQoL was observed among participants who were involved in paid work, men, and young olds.

Prior to the conclusion, the following methodological aspects of this study should be mentioned and taken into considerations while interpreting the results. Firstly, this is a cross-sectional study and hence no causal association may be derived. Secondly, the representation of higher proportion of vulnerable and aged participants belonging to the beneficiary group could have influenced the results. The strengths of this study include a large sample size representing all the six administrative regions of the country. Furthermore, face-to-face interview and use of demographic surveillance system in conducting the study enhanced the reliability of the data. Finally, the instrument used in assessing the HRQoL was specifically designed for the elderly persons.

This study suggests that a significant impact of old age allowance on some specific dimensions of health-related quality of life albeit small and such recommends its continuation and expansion to bring more individuals in its net.

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Table 1. Socio-economic and demographic profile of the study participants by beneficiaries, eligible non-beneficiaries and non-eligible

Indicators	Beneficiaries	Eligible	Non-eligible	p value	p value
	non-beneficiaries				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1 vs 2</i>	<i>1 vs 3</i>
Age (in years) (mean ±sd)	64.8 (13.0)	61.2 (13.3)	66.1 (10.6)	p<0.001	p<0.001
<i>Sex</i>					
Men	30.7	33.6	46.3	ns	p<0.001
Women	69.3	66.4	53.7		
<i>Occupation</i>					
Paid work	28.9	40.6	30.2	p<0.001	ns
Unpaid work	71.1	59.4	69.8		
<i>Marital status</i>					
Married	39.5	36.5	59.8	ns	p<0.001
Single	60.5	63.5	40.2		
<i>Education</i>					
Illiterate	83.1	81.2	58.5	ns	p<0.001
Literate	16.9	17.8	41.5		
n	509	1,224	2,098		

Table 2. Comparison of HRQoL scores between beneficiaries, eligible non-beneficiaries and non-eligible in each dimension and overall HRQoL

HRQoL dimension	Beneficiaries	Eligible non-beneficiaries	Non-eligible	p value	p value
	(Mean scores & SD)	(Mean scores & SD)	(Mean scores & SD)		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1 vs 2</i>	<i>1 vs 3</i>
Physical	9.6±3.3	10.5±3.3	11.5±3.5	p<0.001	p<0.001
Psychological	10.5±2.6	10.9±2.5	12.5±2.8	p<0.01	p<0.001
Social	15.3±2.6	15.0±2.6	16.3±2.4	p<0.05	p<0.001
Spiritual	7.0±1.2	6.9±1.5	7.2±1.2	ns	p<0.001
Economic	4.0±1.2	3.8±1.2	5.0±1.6	p<0.01	p<0.001
Environment	9.5±2.0	9.6±2.1	11.0±2.2	ns	p<0.001
Overall	55.7±8.5	56.5±8.7	63.6±9.7	ns	p<0.001

Table 3. Comparison of mean HRQoL scores by different socio-economic and demographic indicators

Indicators	Physical	Psychological	Social	Spiritual	Economic	Environment	Overall
<i>Sex</i>							
Men	10.8±3.5 ^a	11.1±2.3 ^a	15.3±2.6 ^b	6.9±1.5	4.0±1.3 ^a	9.8±2.1 ^a	57.9±9.3 ^a
Women	9.7±3.0	10.4±2.4	14.9±2.6	6.9±1.4	3.7±1.2	9.3±2.0	54.9±7.9
<i>Age group (year)</i>							
60-69	10.8±3.3 ^a	11.0±2.3 ^a	15.5±2.3 ^a	6.9±1.4	3.8±1.2	9.7±2.1 ^a	57.7±8.4 ^a
75+	9.4±3.2	10.4±2.5	14.5±2.3	5.9±1.5	3.8±1.3	9.3±2.1	54.4±8.6
<i>Education</i>							
Illiterate	10.0±3.2 ^a	10.6±2.5 ^a	14.9±2.3 ^a	6.8±1.5 ^a	3.4±1.2 ^b	9.4±2.0 ^a	55.6±8.4 ^a
Literate	11.2±3.4	11.3±2.6	15.8±2.3	7.2±1.3	4.1±1.4	10.1±2.2	59.8±8.8
<i>Marital status</i>							
Married	10.8±3.3 ^a	11.1±2.5 ^a	15.3±2.5 ^a	6.9±1.4	3.9±1.2	9.8±2.1 ^a	57.7±8.8 ^a
Single	9.6±3.2	10.3±2.4	14.8±2.3	6.9±1.5	3.8±1.2	9.3±2.0	54.7±8.2
<i>Occupation</i>							
Paid work	11.7±3.2 ^a	11.5±2.3 ^a	16.0±2.3 ^a	6.9±1.4	4.1±1.3 ^a	10.0±2.1 ^a	60.2±8.3 ^a
Un paid work	9.5±3.1	10.4±2.4	14.6±2.6	6.9±1.5	3.7±1.2	9.3±2.0	54.4±8.2

a=p<0.001; b=p<0.01; c=p<0.05

Table 4. Multiple linear regression analyses examining the predictors of various dimensions of HRQoL and overall HRQoL

Co-variates	Physical β	Psychological β	Social β	Spiritual β	Economic β	Environment β	Overall β
<i>Sex</i>							
Man=1	-0.134 ^a	-0.88 ^b	-0.049	0.086 ^c	-0.100 ^b	-0.105 ^b	-0.116 ^a
Woman=2							
Age (years)	-0.205 ^a	-0.138 ^a	-0.223 ^a	-0.020	-0.038	-0.109 ^a	-0.219 ^a
<i>Education</i>							
Illiterate=1	0.086 ^b	0.067 ^b	0.085 ^b	0.118 ^a	0.056 ^c	0.093 ^a	0.128 ^a
Literate=2							
<i>Marital status</i>							
Married=1	-0.018	-0.039	-0.026	-0.035	0.045	0.004	-0.025
Single=2							
<i>Beneficiary of allowance</i>							
Yes=1	-0.073 ^b	-0.047	0.089 ^b	-0.018	0.056 ^c	-0.022	-0.009
No=0							
Total R ²	9.1%	4.8%	6.9%	1.3%	1.2%	3.7%	9.7%

a=p<0/001; b= p<0.01; c=p<0.05