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ABSTRACT

Purpose: *The aims of this research was to see whether a community-based intervention could be effective in promoting comprehensive indicators for successful aging.*

Methods: *The participants (60 years old and above) were recruited from rural and urban parts of Bangladesh's Rangpur district for this seven-month intervention program. Successful aging indicators included blood pressure control or diabetes management, adherence to recommended physical exercise and diet, cognitive impairment, depressive symptoms, engagement in social activities, religious activities, and volunteer activities.*

Results: *In the follow-up period the likelihood to control hypertension and diabetes in comparison to the baseline were 1.64 (95 % confidence interval [CI] = 1.12- 3.38) and 1.89 (95 % CI = 1.44- 2.87) times higher. Participants in the follow-up were 2.21 (95 % CI = 1.87–3.45), 2.01 (95 % CI = 1.61–2.99) times more likely to adherence to recommended physical activity and diet compared with the baseline. This intervention was shown to be significantly linked to lower likelihood of developing cognitive impairment and depressive symptoms. In the follow-up period group activities increased 98% as compared to baseline.*

Novelty/Value: *This community-based intervention was found to be helpful in boosting successful aging markers for chronic disease management, maintaining good mental and physical function, and maintaining life engagement.*

Type of Research: *Empirical Research.*

Keywords: Bangladesh, Community based intervention, Aging indicators, Efficacy of a community

1. INTRODUCTION :

In gerontology, the new paradigm in aging is successful aging [1]. The subject of successful aging is extensively researched, and it is widely acknowledged as a multifaceted notion [1]. Previous research has revealed protective and risk variables for multidimensional effective aging [2-5]. However, promoting healthy aging and avoiding aging-related risks are not simple undertakings. Successful aging is hampered by a lack of understanding about prior to aging successfully reaching advancing years, a hard-to-change way of life or difficulties preserving healthy habits, and a disregard for some aspects of optimal aging. It is believed that if a health promotion intervention was successful in achieving such improvements in comprehensive measures of effective aging, older people's quality of life would increase and their medical and care expenditures would decrease [6].

Over 13 million persons in Bangladesh are over 60 years old as of 2019, accounting for 8% of the country's overall population.[7] With 36 million people over the age of 60, the proportion of senior persons is predicted to treble to 21.9 % in 2050. This indicates that one out of every five Bangladeshis will be beyond the age of 65 [7]. As the population ages, so does the demand in the interest of health. Because of the aging immune system deterioration, older people suffer from noncommunicable diseases. Hypertension, weight gain and obesity, diabetes, heart disease, joint pain, immunity, anxiety

and depression with vision loss, walking issues, chewing difficulty, hearing loss, osteoporosis, arthritis, and incontinence round out the list [8-9].

On the basis of the efficacy of previous research, it is anticipated that that implementing a successful aging program to promote complete indicators will aid in the promotion of health among the elderly. Furthermore, an effective aging program could help seniors and their families save money on medical expenses.

2. REVIEW BASED RELATED WORK :

Several health promotion programs aimed at promoting successful aging have been carried out over the world to date. Some of these intervention studies aimed at improving physical health are focused on specific illnesses [10-12]. For example, a study conducted among 223 low-income Latinas (Hispanics) aged 35-64 years to assess the viability of a lifestyle modification intervention for overweight people guided by a promotora, Latinas who have immigrated to the United States found that an intervention in lifestyle habits led by promotra can improve overweight Latina women's lifestyle choices and other risk factors. The likelihood of executing this intervention in the community, as well as promotoras acting as facilitators is backed up by evidence [10].

Another study of 312 people in Lawrence, Massachusetts, looked at the effectiveness of a literacy-catered, community-based, and intervention in a way of life that is culturally appropriate on diabetes risk and weight reduction. It found that in a high-risk Latino group, community-based program for diabetes prevention led to loss of weight, better HbA1c, and raise resistance of insulin [11]. From January 2001 to March 2013, a comprehensive literature search was undertaken to find articles that employed technology to encourage physical exercise in persons with diabetes type 2. The results suggest that technology-based interventions to increase physical activity are beneficial [12].

Some of the interventions aimed to improve the elderly's psychological well-being, cognitive function, emotional wellness, adaptation, and resilience are just a few examples.[13-16] A research of 58 Japanese community-dwelling older persons, for example, suggests that a picture book reading training program for older people that live in the community could help avoid remembrance and impairment in executive function [13]. Another study conducted in Germany among participants aged 40 to 55 years old discovered that cognitive interventions can cause functional changes in brain systems linked with spatial navigation, which appear to be more powerful than the advantages of physical activity among people in their middle years [14].

Cognitive interventions can cause functional changes in brain systems linked with spatial navigation, in accordance with a randomized controlled clinical trial study conducted among Seniors aged 65 to 94 years old living independently in ten cities of United Kingdom (UK) were recruited from senior housing, community centers, hospitals, and clinics [15]. The intervention is successful in enhancing positive mental health by increasing abilities of acceptance and value-based action, according to a study done in the Netherlands among 93 participants with mild to severe psychological distress [16].

Some of them concluded that social activities and participation can help the elderly feel better [17-18]. Social integration is useful in supporting successful ageing indicators, according to a community-based study conducted in Taiwan [17]. Participants for a private insurance company's experimental and control groups successful aging intervention program were selected from the workers and middle-aged customers. The program for aging intervention that worked enhanced aging awareness, engage in physical activity, and wellness significantly [18].

Despite the numerous programs of intervention, only a handful study applies complete tactics to stimulate the development of successful aging indicators. Interventions should be all-encompassing and responsive to a variety of factors of effective aging in order to help people who are approaching old age successfully.

3. OBJECTIVES OF THE STUDY :

The focus of this research was to see how effective an intervention program that is based in the community could be at promoting comprehensive indicators of successful aging.

3.1 Methods:

Design and participants

The data for this community-based pre-post intervention study were collected in Bangladesh's Rangpur

district. In Bangladesh, urban areas are separated into wards while rural areas are clubbed together as a union. One union from the rural areas and one ward from the urban areas were chosen at random from the district. Following a basic random sampling procedure, 13 mahallas from the ward and 13 villages from the union were chosen. The field investigators visited each family in the 26 areas chosen and collected information from all elderly residents in those areas through face-to-face interviews utilizing a prepared questionnaire. Participants were selected based on the requirements listed below: (1) they were 60 years old or older; (2) they were able to converse orally and were both willing and able to engage in the study; and (3) they were not severely ill. The desired sample size for this investigation was 750 participants, which provided more than 80% power to detect a 20% effect size on the marginal means. To minimize missing out on follow-up, the sample size was expanded to 800.

Data collection procedures

(1) Before the study

We ran a trial survey of the questionnaire before performing the interview and updated it as needed for the final poll. According to the guidelines of basic parameters essential for comprehensive research, we chose ten percent of the total sample (n = 80) for a pilot test. The survey was written in English and then translated into Bangla, Bangladesh's native tongue. As a validation activity, translation from Bangla to English in reverse was undertaken prior to and following the administration of the pre-test questionnaire. Based on the results of the pre-test, the questionnaire was modified. In April of 2018, a baseline survey was conducted.

(2) Community-based successful aging indicators intervention

Once the baseline survey was finished, for this investigation, we hired four qualified medical professionals who has received a degree from a Bangladeshi medical college and skilled nine Research Assistants (RAs). The RAs had four days of training prior to the survey. Following the study of previous intervention research [1-18], medical professionals created successful aging indicators materials. The training was conducted utilizing a Bangla-language field manual. In a group of 20, participants got the successful aging indicators intervention. Each month, there were two interactive sessions, each lasting one hour. The intervention courses were seven months long (From May 01, 2018-Novemeber 30, 2018). The collection of follow-up data was completed in December 2018. The intervention's curriculum included the classes and activities listed below.

1. Throughout the course, the notion and many angles of effective aging, connected elements to successful aging, and basic practices for successful aging were all discussed.

2. The training covered the notion of promoting health, the connection the relationship between physical exercise and fitness, and easy exercises for older people.

3. The course included major chronic diseases such as hypertension and diabetes mellitus, as well as preventative and risk factors for disease management, and the use of anti-diabetic and anti-hypertensive medications.

4. Depression management: the mechanism of depression and effective coping techniques for depression were discussed, and participants related their personal experiences with depression management.

5. Dietary recommendations: The course introduced the national dietary guidelines concept.

(3) After completion intervention

The same questionnaire was used to collect follow-up data after seven months of intervention. During the data gathering process for the follow-up data, RAs conducted visits to the participants' residences.

Measures:

Outcome evaluation

The three primary components of Rowe and Kahn's [19] successful aging model were utilized to assess successful aging: "absence of disease or chronic disease management, maintenance of good mental and physical function," and "continuous involvement with life." The following successful aging indicators

were chosen as outcomes of interest based on these three domains: (1) indicators for chronic disease management, such as blood pressure control or diabetes management; (2) indicators for maintaining high mental and physical function, such as following the physical exercise guidelines and diet, cognitive impairment, and depressive symptoms; and (3) indicators for the "continued engagement with life", such as involvement in group, religious and voluntary work.

In this investigation, the digital Blood Pressure (bp) Monitor was employed. The respondents' hypertension was calculated using the averages of three different systolic and diastolic bp readings taken at 5-minute intervals. Hypertension was defined as having a systolic bp of 140 millimeters of mercury or a diastolic bp of 90 millimeters of mercury, or using antihypertensive medication. Along with antihypertensive medication [20], patients with a systolic bp of less than140 mm Hg or a diastolic bp of less than 90 mm Hg were considered to have hypertension under control [21].

The HemoCue 201+ blood glucose analyzer was used to evaluate the blood glucose level in total blood gathered by capillaries of the middle and ring fingers were pricked using a finger prick. following an whole night fast, a common methods in resource-constrained situations. Diabetes was defined as fasting plasma glucose (FPG) of ≥ 7.0 mmol/L or the anti-diabetic drug usage, in accordance with the World Health Organization (WHO) guidelines. If a patient's FPG was < 7.0 mmol/L and they were using anti-diabetic drug, we considered their diabetes to be under control [22].

The elderly population's adherence to prescribed food regimens during the previous seven days was assessed using ten questions derived from nutritional guidelines for Bangladeshi adults [23]. These questions elicited responses on a 7-point Likert type scale with a highest score of 70 about overall diet adherence, suggested every day three meals, fruit and vegetable portions, as well as carbohydrate-rich foods with a poor glycemic index, are recommended sugary drinks, foods with high fat, rich-sugary foods, foods with high fiber, n-3 fatty acids, healthful (monounsaturated) oils, sugary drinks were all graded on a scale of one to seven. The person was considered to be following dietary recommendations if their predicted score in total was greater than or equal to 80% of the maximum attainable total score ≥to 56.

In Bangla, the International Physical Activity Questionnaire (IPAQ) has been redesigned and used to assess the people' leisure-time physical activity [24]. The validity of these questions about physical exercise in Bangladesh's adult population has been thoroughly investigated elsewhere [24]. The total amount of time spent conducting moderate activities. (e.g., walking, mild cycling, gardening, mild exercises, e.g., playing games with the kids) to strenuous exercise (e.g., jogging/running, and putting more effort into riding, and activities such as quick swimming, team sports such as football or volleyball. For each activity, a different calculation was made. Every week, people should engage in at least 150 minutes of moderate-intensity physical activity or 75 minutes of strenuous-intensity physical activity, or a combination of both. If [moderate physical activity + strenuous physical activity × 2] ≥ 150 minutes in 7 days, a patient was judged to be following the recommended physical exercise regimen [25].

If the individuals' cognitive functioning was normal, they met the criteria, as assessed via the Dementia Screening Mini Mental State Examination (MMSE-DS). Finally, depressive symptoms were measured utilizing the version in Bengali of the Short Geriatric Depression Scale-15 (SGDS-15) [26], with patients fitting the criteria if their score was less than eight.

Covariates

Several socioeconomic and demographic characteristics have been related to successful aging indicators both theoretically and experimentally in this study.[2-18] The participants were divided into four age groups: 60–64, 65–69, 70–74, and over 75 years old are the age groups. Bangladesh's formal education system was used to identify the respondents' educational level: illiterate (0 year), primary (incomplete; 1-4 years), primary (complete; 5 years), secondary or higher education (6 years or more). The habitation was divided into two categories: rural and urban.

Muslims and non-Muslims were classified as Muslims and non-Muslims, respectively. There were three levels of monthly income: none, <3000 BDT, 3000-4999 BDT, and ≥5000 BDT. There were four types of live children: none, son(s) only, daughter(s) only, or both. There were two types of living arrangements: living alone or living with others. To measure old age allowance, a dichotomous variable (no vs. yes) was established.

Statistical analysis

Before entering the final data into Microsoft Excel, the data was cross-checked for consistency. The data was entered by one person, who subsequently double-checked it with the study's primary investigator. The baseline socio-demographic factors of the respondents were determined using descriptive method. Between the baseline and follow-up, we used McNemar's chi-square analyses to assess the effectiveness of the intervention on three themes that recur successful aging indicators: (1) indicators for chronic disease management; (2) indicators for maintaining high mental and physical wellbeing; and (3) continued engagement indicators with life. Significance level were represented by *P* values. $P<0.05$ was thought to be statistically significant (two-tailed).

After adjusting for baseline risk factor levels, multivariable logistic regression models were applied to estimate the intervention group's impact on our outcome variables for the complete sample. We combined the data sets from the two periods to fit the logistic regression models. We employed nine binary logistic regressions. If the prevalence of diabetes or hypertension control improved throughout the intervention, the dependent variable for the first and second was coded as "1". The third and fourth dependent variables were coded as "1", indicating that adherence to recommended physical activity and diet increased during the follow-up period. If the prevalence of cognitive impairment and depressive symptoms decrease, the dependent variable for the fifth and sixth follow-up periods was coded as "1". The dependent variable for the seventh, eighth, and ninth was coded as "1" if the prevalence of social, religious, and volunteering activities increased over the follow-up period. We utilized 95% confidence intervals (CIs) for significance tests and entered all factors concurrently into multivariable regression models. The odds ratios (ORs) were estimated to measure the strength of the correlations.

In logistic regression research, the regression coefficients' standard errors were utilized to evaluate for multicollinearity. A standard error of more than 2.0 suggests that there is a problem. that there are numerical difficulties, for example multicollinearity exist among the independent variables [27]. All independent variables' standard errors in the adjusted model were less than one, indicating that there was no multicollinearity. SPSS for Windows, version 22.0, was used to conduct the analysis (SPSS, Chicago, IL).

Ethical considerations

Dr. Wazed Research and Training Institute, Begum Rokeya University in Bangladesh examined and approved this study methodology. Individuals were notified concerning the research, asked to join, and advised of their ability to recession prior to the baseline survey. The literate gave informed consent in writing, while the illiterate gave verbal agreement.

4. RESULTS :

(1) Descriptive statistics:

Table 1 displays the study participants' baseline sociodemographic, diabetic, and hypertension-related variables. The study engaged the services of 800 elderly people. Approximately 48% were female, 35.4% were 60–64 years old, and 63.2% were married at the time of the study. In terms of education, 39.3 % had no formal education, 29.1% had education below basic school, 20.1% had completed primary school, and the remainder 11.5% had secondary or higher education.

Table 1: Baseline socio-demographic, diabetes, and hypertension related characteristics of the respondents(n=800)

Characteristics	N	%
Age, years		
60-64	282	35.4
65-69	198	24.7
70-74	134	16.7
≥75	186	23.2
Gender		
Male	417	52.1
Female	383	47.9

Marital status		
Currently married	506	63.2
Widow/widower	294	36.8
No. of children		
None	15	1.9
Have only son(s)	73	9.1
Have only daughter (s)	50	6.3
Have both son (s)daughter(s)	662	82.7
Education		
No education	314	39.3
Below primary	233	29.1
Primary	161	20.1
Secondary and above	92	11.5
Religion		
Muslims	537	67.1
Non-Muslims	263	32.9
Place of residence		
Rural	601	75.1
Urban	199	24.9
Living arrangements		
Living alone	68	8.5
Living with someone else	732	91.5
Monthly income, BDT		
No Income	328	41.0
<3000	226	28.3
3000-4999	141	17.6
≥5000	105	13.1
Receiving old age allowance		
No	658	82.3
Yes	142	17.7
Diabetes		
No	704	88.0
Yes	96	12.0
Hypertension		
No	488	61.0
Yes	312	39.0

When it comes to education, 22.1% of respondent's mothers had a secondary or higher degree of education. Over 91% of the elderly lived with someone else. Only 17.7% of the elderly in the whole sample population had a source of income, and 41% of those who did have no source of income. Diabetes and hypertension were found to be prevalent in the study sample at 12% and 39%, respectively. Table 2 illustrates percentage changes in indicators for chronic disease management, mental and physical function maintenance, and sustained involvement with life. At the outset, 800 people were questioned; however, 20 people were lost to follow-up over the follow-up period. As a result, a total of 780 people were questioned. In terms of chronic illness management indicators, there were substantial variations in almost all of them before and after the intervention. There was a considerable improvement in diabetes control at the follow-up (25% versus 15%) and hypertension management (29 % versus 21%) compared to baseline.

When compared to baseline, there was a substantial improvement (p <0.001) in adherence to the recommended physical activity and diet at the end line. A substantial improvement in cognitive impairment and depressive symptoms at the follow-up. Except for group activities, there was no significant improvement in participation in voluntary and religious activities during the follow-up period in the indicator associated to continuous engagement with life.

Table 2: Percentage change in Indicators for chronic disease management Indicators related to maintenance of high mental and physical function and indicator related to continued engagement with life at baseline and follow-up (n = 780)

Measures	Baseline (n=780)		Follow-up (n=780)		Percentage change[1]	*P*-value
	n	%	n	%		
Indicators for chronic disease management						
Control of blood pressure	59	21.0	91	29.0	8.0	0.004
Control of diabetes	14	15.0	25	25.0	10.0	0.048
Indicators related to maintenance of high mental and physical function						
Adherence to recommended physical activity	322	41.3	434	55.6	14.3	<0.001
Adherence to recommended diet	258	33.1	363	46.5	13.4	<0.001
Cognitive impairment	384	49.2	302	38.7	-10.5	<0.001
Depressive symptoms	399	51.1	303	38.8	-12.3	<0.001
Indicator related to continued engagement with life						
Participation in group activities	125	16.0	220	28.2	12.2	<0.001
Participation in religious activities	733	94.0	743	95.3	1.3	0.262
Participation volunteering activities	69	8.9	87	11.1	3.2	0.129

Note: from follow-up to baseline

2. Multivariable analysis:

Multivariable logistic regression models predicted levels of baseline-adjusted post-intervention chronic illness management markers, preservation of good mental and physical wellbeing and maintained life involvement. In the follow-up period participants were 1.64 (95 % CI = 1.12- 3.38) and 1.89 (95 % CI = 1.44-2.87) fold more probable to control hypertension and diabetes compared to baseline. Individuals in the follow-up investigation were 2.21 (95 % CI = 1.87–3.45), 2.01 (95 % CI = 1.61–2.99) times more likely to adherence to recommended physical activity and diet compared with the baseline. This intervention was observed to be connected to a lower risk of cognitive impairment (AOR = 0.63; 95 % CI = 0.41-0.96) and depressive symptoms (AOR = 0.51; 95 % CI = 0.35- 0.91). In the follow-up period group activities increased 98% as compared to baseline (Table 3).

Table 3: Adjusted odds ratio and 95% confidence interval predicting the impact of the intervention on successful aging indicators (*n* = 780)

Measures	Adjusted odds ratio (AOR)[1]	95 % confidence interval (CI)
Control of blood pressure		
Baseline	1.00	--
Follow-up	1.64[c]	1.12-3.38
Control of diabetes		

Baseline	1.00	--
Follow-up	1.89[b]	1.44-2.87
Adherence to recommended physical activity		
Baseline	1.00	--
Follow-up	2.21[a]	1.87-3.45
Adherence to recommended diet		
Baseline	1.00	--
Follow-up	2.01[a]	1.61-2.99
Cognitive impairment		
Baseline	1.00	--
Follow-up	0.63[b]	0.41-0.96
Depressive symptoms		
Baseline	1.00	--
Follow-up	0.51[b]	0.35-0.91
Participation in group activities		
Baseline	1.00	--
Follow-up	1.98[b]	1.69-3.03
Participation in religious activities		
Baseline	1.00	1.00
Follow-up	0.91	(0.88-1.78)
Participation volunteering activities	1.00	1.00
Baseline Follow-up	0.84	0.72-2.03

Note: Models were adjusted by age, gender, marital, number of children, education, religion, place of residence, monthly income, and old age allowance; here a, *b, and c indicate* $p < 0.001$, $p < 0.01$, and $p < 0.05$

5. DISCUSSION :

This community-based intervention was found to be helpful in boosting successful aging markers for chronic disease management, maintaining good mental and physical function, and maintaining life engagement. Increased control of diabetes and hypertension, as well as following the physical exercise guidelines and diet, were among the notable changes brought about by the intervention. This intervention was linked to a lower risk of acquiring cognitive impairment and depressive symptoms, as well as greater social activities, among the elderly.

This is the first study we're aware of that looks at the impact of a community-based program in Bangladesh on successful aging markers. Unlike previous interventions that focused on specific disorders or only on increasing physical function [10-12], such as food and physical activity, or on the elderly's psychological well-being [13-16] or social participation [17-18], this research looks at a wide range of strategies to promote indicators for successful aging, which is both promising and challenging. Diabetes and hypertension control, as well as adhering to prescribed physical activity and diet were all considerably improved in this study, which is in line with earlier research [10-12]. As a result of this intervention, many factors led to the respondents' enhanced adhere to diet and exercise, in addition control of chronic illness management: The medical professional was well-prepared and gave enough lectures to allow for more efficient discussion of the issue; at the conclusion of the four-day intervention, the instructor evaluated RAs messages and furnished additional support. Furthermore, as previously stated, repeated sessions would very certainly have had a greater influence on boosting participants' awareness of the necessity of regular exercise, a healthy diet, and diabetes and hypertension treatment. The elderlies were given cognitive training using this intervention program., and the effects were significant over time. The intervention on coping skills also had a significant impact on depressive symptoms, as revealed in previous research [28]. It's probable that this intervention's success in reducing depressive symptoms and cognitive impairment is due to the elderly's improved conscious of their own emotions as well as their deeper psychological demands, resulting in fewer emotion volatility and more steadiness than before. This community-based strategy was also successful in improving elderly people's engagement in group activities. This finding is plausible, because throughout the intervention period, the elderly was taught the necessity of participating in their group activities for the sake of their mental and physical well-being.

This study has several advantages. At first, the intervention comprised a variety of outcome-based assessments. There are numerous aspects of chronic disease management, physical and mental wellness, and involvement in social activities were examined in this study. For building community-based health promotion initiatives, such an evidence-based intervention is required and recommended. Second, members of our research team came from a variety of biopsychosocial backgrounds. To design a multi-dimensional intervention program, communication between disciplines and well-thought-out program sequencing can be utilized.

There are a few flaws in this research as well. To begin with, owing to the restricted resources available for this research, the intervention was shorter in duration. It may take some time for the study's effects on effective aging or health measures to become apparent. Second, this report is not based on a randomized controlled experiment. As a result, no control group was used. Third, we exclusively considered diabetes and hypertension for chronic disease treatment. However, because all chronic illness measurements are impossible due to cost constraints, moreover, data has indicated that among all chronic diseases, diabetes and hypertension are more common among the elderly.

6. CONCLUSIONS :

This community-based intervention was found to be helpful in boosting successful aging markers for chronic disease management, maintaining good mental and physical function, and maintaining life engagement. Increased control of diabetes and hypertension, as well as following the required physical activity and dietary guidelines, were among the notable changes brought about by the intervention. This intervention was linked to a reduced risk of mental deterioration. and depressive symptoms, in addition greater social activities, among the elderly. Future study should concentrate on the aspects that influence successful aging based on the basis of subjective markers that were not thoroughly analyzed in this research.

7. FUNDING :

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8. CONFLICT OF INTERESTS :

The author certifies that the publishing of this paper does not include any conflicts of interest.

9. ACKNOWLEDGEMENT :

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10. DATA AVAILABILITY :

On reasonable request, the corresponding author will provide the datasets used and/or analyzed during the current work.

REFERENCES :

[1] Rowe, J. W., Kahn, R. L. (1997). The structure of successful aging. In Successful Aging; Rowe, J. W., Kahn, R. L., Eds.; Dell Publishing: New York, NY, USA, pp. 36–52, ISBN 978-0440508632.

[2] Depp, C. A., Jeste, D. V. (2006). Definitions and predictors of successful aging: a comprehensive review of larger quantitative studies. *Am J Geriatr Psychitr., 14*(1), 6–20. Google Scholar↗

[3] Donnelly, E. A., Hinterlong, J. E. (2010). Changes in social participation and volunteer activity among recently widowed older adults. *Gerontologist. 50*(1), 158–169. Google Scholar↗

[4] Hassan, M. K., Lawrence, S. B. (2007). Retirement savings of the hip generation: a study of retirement preparation among individuals in their fifties. *Southwest Eco Rev. 34*(1), 115–130. Google Scholar↗

[5] Pruchno, R. A., Wilson-Genderson, M., Rose, M., Carwright, F. (2010). Successful aging: early influences and contemporary characteristics. *Gerontologist., 50*(1), 821–833.

Google Scholar↗

[6] Fries, J. F., Koop, C. E., Sokolov, J., Beadle, C. E., Wright, D. (1998). Beyond health promotion: reducing need and demand for medical care. *Health Aff., 17*(1), 70–84. Google Scholar↗

[7] United Nations. (2019). *World Population Prospects 2019*. Retrieved from United Nations Population Division: https://population.un.org/wpp/Download/Standard/Population/

[8] HelpAge International. (2012). *Ageing in the 21st Century: A Celebration and A Challenge*. New York: UNFPA.

[9] HelpAge International, (2015). *Policy Mapping on Ageing in Asia and the Pacific Analytical Report, Chiang Mai: HelpAge International East Asia/Pacific Regional Office.*

[10] Koniak-Griffin, D. Brecht, M. L., Takayanagi, S., Villegas J, Melendrez, M., Balcázar, H. (2015). A community health worker-led lifestyle behavior intervention for Latina (Hispanic) *women: feasibility and outcomes of a randomized controlled trial*. *Inter J Nurs Stud., 52*(1), 75–87. Google Scholar↗

[11] Ockene, I. S., Tellez, T. L., Rosal MC, Reed G, Mordes J., Merriam, P. A., et al. (2011). Outcome of a Latino community based intervention for the prevention of diabetes: the Lawrence Latino Diabetes Prevention Project. *Am J Public Health 102*(1), 336–342. Google Scholar↗

[12] Connelly, J., Kirk, A., Masthoff, J., MacRury, S. (2013). The use of technology to promote physical activity in type 2 diabetes management: a systematic review. *Diabet Med. 30*(1), 1420–1432. Google Scholar↗

[13] Suzuki, H., Kuraoka, M., Yasunaga, M., Nonaka, K., Sakurai, R., Takeuchi, R., et al. (2014). Cognitive intervention through a training program for picture book reading in community-dwelling older adults: a randomized controlled trail. *BMC Geriatr, 14*(1), 1-9. Google Scholar↗

[14] Hötting, K., Holzschneider, K., Stenzel, A., Wolbers, A., Röder, B. (2013). Effects of a cognitive training on spatial earning and associated functional brain activations. *BMC Neurosci. 14*(1), 1-16. Google Scholar↗

[15] Wilis, S. L., Caskie, G. I. L. (2013). Reasoning training in the ACTIVE Study: how much is needed and who benefits? *J Aging Health. 25*(8 Suppl), 43S–64S. Google Scholar↗

[16] Fledderus, M., Bohlmeijer, E. T., Smit, F., & Westerhof, G. J. (2010). Mental health promotion as a new goal in public mental care: a randomized controlled trial of an intervention enhancing psychological flexibility. *Am J Public Health. 100*(1), 2372–2378. Google Scholar↗

[17] Lu, P. C. (2011). Social integration of the older adults in Taiwan: The case of community participation. Taipei: Research project report of National Science Council, Taiwan, R.O.C.; (NSC 97–2420-H-004– 159-KF3) [in Chinese].

[18] Hsu, H. C., Chuang, S. H., Hsu, S. W., Tung, H. J., Chang, S. C., Lee, M. M., Wang, J. Y., Kuo, L. T., Tseng, F. Y., Po, A. T. (2019). Evaluation of a successful aging promotion intervention program for middle-aged adults in Taiwan. *Glob Health Promot., 26*(1), 81-90. Google Scholar↗

[19] Rowe, J. W., & Kahn, R. L. (1998). Successful Aging; Pantheon Books: New York, NY, USA.

[20] Chobanian, A. V. (2003). Joint national committee on prevention, detection, evaluation, and treatment of high blood pressure. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension., 42*(6), 1206–1252. Google Scholar↗

[21] Rahman, M., Nakamura, K., Hasan, S. M. M., Seino, K., & Mostofa, G. (2020). Mediators of the association between low socioeconomic status and poor glycemic control among type 2 diabetics in Bangladesh. *Sci Rep.*, *10*(1), 6690-6699.
Google Scholar↗

[22] Rahman, M., Nakamura, K., Kizuki, M. (2015). Socioeconomic differences in the prevalence, awareness, and control of diabetes in Bangladesh. *J Diabetes Complications*, *29*(6), 788-793.
Google Scholar↗

[23] Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders. Guidelines for care of type 2 diabetes mellitus in Bangladesh., BIRDEM, Dhaka, Bangladesh (2003).

[24] Kahan, D. (2015). Adult physical inactivity prevalence in the Muslim world: Analysis of 38 countries. *Prev Med Rep.*, *2*(1), 71–59.
Google Scholar↗

[25] World Health Organization. Recommended levels of physical activity for health. World Health Organization, Regional Center for the Eastern Mediterranean Available at http://www.emro.who.int/health-education/physical-activity/recommended-levels-of-physical-activity-for-health.html (2018).

[26] Lahiri, A., Chakraborty, A. (2020). Psychometric validation of geriatric depression scale - Short form among bengali-speaking elderly from a rural area of West Bengal: Application of item response theory. *Indian J Public Health.*, *64*(2), 109-115.
Google Scholar↗

[27] Chan, Y. H. (2004). Biostatistics: logistic regression analysis. *Singapore Med J.*, *5*(1), 149–53.
Google Scholar↗

[28] Gitlin, L. N., Szanton S. L., Huang, J., & Roth, D. L. (2014). Factors mediating the effects of a depression intervention on functional disability in older African Americans. *J. Am. Geriatr. Soc.*, *62*(1), 2280–2287.
Google Scholar↗

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