

Practices of Healthy Lifestyles in the Prevention of Non - Communicable Disease and Associated Factors among Adult Residences of North Shoa Zone Oromia Region, Ethiopia 2021

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ABSTRACT

BACKGROUND: Morbidity and mortality from preventable, NON - Communicable Chronic Disease (NCD) affect the health of populations and the economy. The rising prevalence of Non – Communicable Diseases (NCDs) in Low and Middle - Income Countries (LMICs) needs critical attention. Assessing the practice of a healthy lifestyle has a significant impact in decreasing the incidence and prevalence of these diseases.

OBJECTIVE: To assess practices of healthy lifestyles to prevent NCDs and associated factors among adult residences of North Shoa Zone Oromia region 2021

Methods: A community based cross sectional was conducted among adult populations (above 18 years). The study was conducted among urban residences of the North Shoa Zone Oromia Region from April 01 to May 30 / 2021. The multistage sampling technique was used to select the study participants. The data was entered into the Epi - data manager version 4.6.0.2 and data was exported to SPSS version 23 for analysis. The bivariate and multivariable logistic regression analyses were done to see the association between dependent and independent variables.

RESULTS: A total of 823 participants responded giving a response rate of 97.3 %. The mean age of the respondent was 31.83 ± 11.04 years of the total 443 (53.8 %) were female. About 31.5 % of respondents had adequate practices for NCDs prevention. Factors associated with the adequate practice of NCD prevention were attending secondary education (AOR = 2.12, 95 % CI: 1.01 - 4.44), attending above secondary school (AOR = 2.73, 95 % CI: 1.38 - 5.41) getting information from health professionals (AOR = 2.30, 95 % CI: 1.42 - 3.74) and adequate knowledge of NCDs (AOR = 19.54, 95 % CI: 11.49 - 33.21).

CONCLUSION: Practices towards NCD prevention are low in the study area.

KEYWORDS

North shoa, NCDs, Awareness of NCDs, Practice of NCDs preventions

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INTRODUCTION

Non - Communicable Diseases (NCDs), also known as chronic diseases, do not spread from person to person. These illnesses take a long time to develop and do not present symptoms in the early stages. They require treatment for several years, and some require life - long treatment. Several diseases fall into this group of conditions. The main types of non - communicable diseases are diabetes, Cardiovascular Diseases (CVDs), cancers, and chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma).^{1,2} According to the World Health Organization (WHO), more than 36 million people die annually from Non - Communicable Diseases (NCDs), representing over 60 % of deaths worldwide, 15 million of which occur before the age of 70 years.^{3,4} Non - Communicable Diseases (NCDs) are the leading causes of death and disability globally, killing more than three in five people worldwide and responsible for more than half of the global burden of disease.⁵ An estimated 36 million deaths, or 63 % of the 57 million deaths that occurred globally in 2008, were due to non - communicable diseases, comprising mainly cardiovascular diseases (48 % of non - communicable diseases), cancers (21 %), chronic respiratory diseases (12 %) and diabetes (3.5 %).⁶ A report by WHO in June 2018 indicated that NCDs contribute to 80 percent of all premature death. CVD accounts for the most NCD deaths globally, 17.9 million deaths annually, followed by cancers (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million).⁷ Non - Communicable Diseases (NCDs) are a growing crisis in low - and middle - income countries.⁸ The burden of NCDs is critical in developing countries when it is added to the burden of communicable diseases. In low - income and middle - income countries, diseases are generally affecting people at a younger age compared to their counterparts in the developed world. Consequently, the double burden of communicable and non - communicable diseases constitutes a major impairment to economic and human development in developing countries.⁹ In Ethiopia in 2015, NCDs were the leading causes of age - standardized death rate (causing 711 deaths per 100,000 people). The national estimates of the prevalence of NCD metabolic risk factors showed high rates of raised blood pressure (16 %), hyperglycemia (5.9 %), hypercholesterolemia (5.6 %), overweight (5.2 %), and Obesity (1.2 %). The prevalence of 3 - 5 risk factors constituting a metabolic syndrome was 4.4 %.¹⁰ Non - communicable diseases have potentially serious socioeconomic consequences, through increasing individual and household impoverishment and hindering social and economic development.¹¹ Economic loss due to NCDs is also the main challenge of development in Ethiopia. An economic burden analysis shows that economic losses from NCDs (direct and indirect costs) make up 31.3 billion birrs per year, which is equivalent to 1.84 % of Ethiopia's gross domestic product in 2017.¹² In Ethiopia study suggested that NCDs are highly prevalent among the urban population which is majorly related to lifestyle.¹³ In the prevention of NCDs lifestyle modification play a major role. The following are important in combating the NCDs which includes the behavioral change as the core component of all clinical programs for the prevention and management of chronic disease, establishing actual centers to design, implement, study, and improve preventive programs for chronic disease, use human - centered design in the creation of prevention programs with an inclination to action, rapid prototyping, and multiple iterations, extend the

knowledge and skills of Sports and Exercise Medicine (SEM) professionals to build new programs for the prevention and treatment of chronic disease focused on physical activity, diet, and lifestyle and Mobilize resources and leverage networks to scale and distribute programs of prevention.¹⁴ This study aims to assess the knowledge of non - communicable diseases and practices related to healthy lifestyles among adult residences which can contribute to the reduction of NCD occurrences.

MATERIAL AND METHODS

Study Area and Period

The study was conducted in the North Shoa zone, Oromia region, Ethiopia. The zone has a total area of 10,322.48 Km square with 138.66 population density. The zone has 13 rural districts and two town administrations. Fiche town, the capital of the zone is located 112 km from Addis Ababa, the capital city of Ethiopia, in the North direction. Based on the 2007 national population and housing census, the Zone has a total population of about 1,639,586 of whom 717, 552 are men and the rest were female. The Zone has a total of 521, 506 households with an average household size of 4.57 persons per household. The ethnic groups found in the zone include Oromo (84.33 %), Amhara (14.99 %), and others (0.68 %). Orthodox Christians (92.43 %) were the dominant religious group followed by Muslims (5.34 %) and 1.61 % were protestant followers. The zone has sixty - four health centers and five public hospitals that provide health care services for the community. The study was conducted from April 1, 2021, to May 30, 2021.^{15,16}

Study Design

Community based cross sectional study was conducted.

Populations

Source populations were all adult (above 18 years) residents of a selected town in the north Shoa zone who were permanent residents while the study population was randomly selected adult residences of the study area.

Eligibility criteria: An adult individual who lived at least six months in the district before the study were included in the study and those adults who were unable to hear, and severely ill during data collection time were excluded.

Sample Size and Sampling Procedure

Sample size calculation: The sample size was determined manually using a single population proportion formula ($n = ((z - (\alpha / 2))^2 p (1 - p)) / d^2$), based on the assumptions of 95 % confidence level, 5 % margin of error, and a 50 % proportion of practices related to healthy lifestyles of NCD. A prevalence of 50 % was taken because there was no similar study done in Ethiopia previously. After adding 10 % contingency for non - response, the final sample size for the study was 423. Using design effect of 2 the final sample was 846.

Sampling techniques: Multistage sampling technique was used to recruit the study participants. Towns were purposely selected since the prevalence of NCDs is high among urban populations. Thirty percent of the towns in the zone were selected by lottery method. Thirty percent of towns in the zone were randomly selected including Fiche, Kuyu, Sherero, Mukaturi and Gundemeskel. Then 30 % of their kebeles was

selected. The sample size was proportionally allocated for each town. Accordingly Fiche, Gerba Gurach, Gundemeskel, Sherero, Mukaturi 338, 169,169, 85 and 85 were assigned respectively. Finally simple random sampling was used to select households from the kebeles using house number. In household with more than one adult, lottery method was used to select one.

Data Collection Tools and Personnel

Data collection tools: Questionnaire was adapted from similar studies. Questionnaire has four parts including socio - demographic, exposure to NCDs information, knowledge and practices of healthy life styles which was developed by reviewing different literatures (1, 18, 21, 23, and 24). The tool was translated to local language, Afan Oromo then back to English, to ensure its consistency. Then it was pre - tested on 5 % of total sample size in the district which not selected for actual study data collection to evaluate readability, understandability, completeness, and reliability of the questionnaire and modified accordingly.

Data collection personnel and procedures: Data were collected by trained data collectors. Ten BSc nurses were recruited for data collection. Five supervisors who have BSc. in public health were recruited and facilitate the data collection procedures. The data collectors and supervisors were recruited based on their previous experience on data collection. Two - day training was given for data collectors and supervisors.

Study variables

Dependent variable of the study was practices related to healthy lifestyles for NCD prevention. The independent variables were socio - demographic information (age, sex, religion, marital status, educational status, occupational status, income and ethnicity), exposure information about NCDs (getting information from media, getting information from health professionals, getting information from family members, having family members with NCDs and having friends with NCDs) and behavioral factors (physical activity, alcohol and tobacco use).

Data Processing and Analysis

The collected data were checked for completeness manually, and entered, cleaned and checked by Epi data manager version 4.0.2.101 and then exported to SPSS version 23 statistical packages for analysis. Descriptive analysis of different variables was done and presented in terms of frequencies, percentages and text. Bivariate binary logistic regression analyses were done for all independent variables and variables with a p - value less than 0.25 was considered as candidates for the multivariable model. Finally, multivariable logistic regression analysis was conducted to identify factors associated with outcome variables. To determine factors associated with outcome variable p - value of less than 0.05 was taken as cut off point. To determine magnitude of association odds ratio with its confident interval was used.

Data Quality Management

Pre - test was conducted on 5 % of the sample size before the main study. Two - day training was given for data collectors and supervisors on how to collect data. The data collection methods, tools and how to handle ethical issues was discussed with the data collectors. Regular supervision by the supervisor and the investigators was made to ensure that all necessary data properly collected. Each day during data collection, filled questioners were checked for completeness and consistency.

Operational Definition and Measurements

A respondent was considered to have healthy dietary habits if the following criteria were met: Consuming 1) home prepared food for ≥ 5 days / week 2) non fast food for ≥ 5 days / week 3) fruits ≥ 5 days / week; 4) ≥ 5 servings/day of vegetables and green leaves 5) consuming fruit juice ≥ 5 days / week 6) carbonated drinks infrequently (< 2 days / week), and 7) non consumption of additional salt (in comparison to their other family members). Each fulfilled criterion was given one point, with a maximum possible score of seven. Those who obtained a score ≥ 5 were considered as having healthy dietary habits. A smoker was defined as one who smokes currently. Those who had previously (but not currently), or never smoked were considered as non - smokers. A respondents who is currently consuming alcohol was considered as consuming alcohol, and those who had previously (but not currently), or never consumed were considered as "not consuming alcohol". Finally health life style for prevention of NCDs was considered if respondent practice healthy dietary habits plus cessation of alcohol or smoking cigarette. Knowledge was assessed 33 questions related to respondents' knowledge about NCDs and their risk factors. Correct answers was given a score of 1 and incorrect answers given 0. The total possible score ranged from 0 to 33. A cut - off level ≥ 60 %, of the individual percentage scores, was selected as an indicator of "good" knowledge.

RESULTS

Socio - Demographic

Total samples of 823 respondents complete the survey making a response rate of 97.3 %. A mean age respondent was 31.83 ± 11.04 years. From the total 443 (53.8 %) were female. Regarding marital status 497 (60.4 %) of them were married. About one third of them 255 (31 %) of them attended above secondary education. Majority 628 (76.3 %) were Oromo ethnic group. About 189(23 %) of them were a merchant in occupation (Table 1).

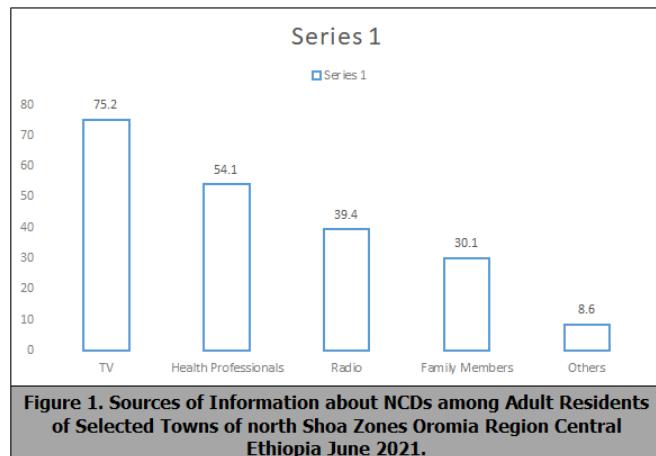
Variables	Categories	Frequency	Percent
Age group	Less 25	230	27.9
	25 - 29	205	24.9
	30 - 34	113	13.7
	Above 34	275	33.4
Sex	Male	380	46.2
	Female	443	53.8
Marital status	Single	270	32.8
	Married	497	60.4
	Divorced	24	2.9
	Widowed	32	3.9
Religion	Orthodox	607	73.7
	Protestant	176	21.5
	Muslim	24	2.9
	Others	16	1.9
Educational status	No education	153	18.6
	Primary	212	25.8
	Secondary	203	24.7
	Above secondary	255	31

Occupation	Housewife	162	19.7
	Gov't employee	187	22.7
	Farmer	91	11.1
	Merchant	189	23
	Students	154	18.7
	Others	40	4.9
Ethnic background	Oromo	628	76.3
	Amhara	160	19.4
	others	35	4.3
Monthly income	= < 3578	341	56.6
	3578	261	43.4

Table 1. Socio - Demographic Characteristics of Adult Residents of Selected Towns of North Shoa Zones Oromia Region Central Ethiopia June 2021.

Exposure to Information about Ncds

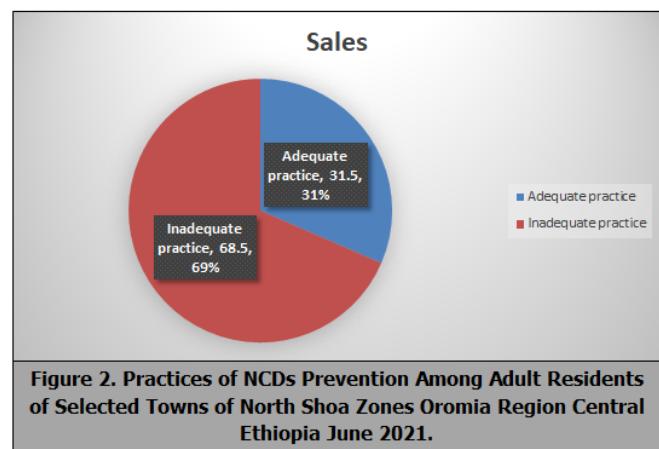
All of the study participants heard about NCDs. Majority of the study participants 619 (75.2 %) of them heard about NCDs from TV Figure 1.



From the total 218 (26.5 %) of the have family members with NCDs. The more prevalent NCD was hypertension accounting 187 (22.7 %).

Knowledge of NCDs

The mean score of respondents was 14.6 with standard deviation of 4.34. From the total 279 (33.9 %) of the participants had adequate knowledge status (Figure 2). Regarding the cause of causes of NCDs about one third 255 (31.0 %) said NCDs caused by supernatural power (God). Regarding the occurrence about 377 (45.8 %) of the study participants said that NCDs occurred only at old age.



Practices of Healthy Life Style for Ncd Prevention

From total respondents 259 (31.5 %) of them had adequate practices of healthy life style for NCDs prevention. Figure 2. Majority of the study participants 761 (92.5 %) eat home prepared food more than 5 days per week. Five hundred ninety eight (72.7 %) of the respondents are not alcohol drinkers and only 334.0 were smokers. About 136 (16.5 %) of the participants avoid excess salt consumption while only 42 (5.1 %) of the study participants do moderate physical exercise while to avoid the occurrence of NCDs.

Factors Associate with Adequate Practices Healthy Life Style

To assess factors associated with adequate practice of NCD prevention variables like Variables like age group, Educational status, Occupation, Monthly income, Getting information from HP, Having family member with NCD and Knowledge of NCD were candidate for multivariable logistic regression analysis by having p value of less than 0.25 in binary logistic regression. To control possible confounding multivariable logistic regression was conducted. Hosmer and Lemeshow test were checked to test model fitness and it gave p value of 0.27. In multivariable logistic regression educational status, getting information from HP and Knowledge of NCDs were associated with adequate practice of healthy life style for NCD prevention. Participants who attended secondary education were 2.12 times more likely to have adequate practice of NCD prevention when compared with no education (AOR = 2.12, 95 % CI: 1.01 - 4.44). Also respondents who attended above secondary school were 2.73 times more likely to have adequate practice of NCDs prevention than no education (AOR = 2.73, 95 % CI: 1.38 - 5.41). Respondents who information from health professionals were 2.30 times more likely to have adequate practice of NCDs prevention when compared with those do not get information from health professionals (AOR = 2.30, 95 % CI: 1.42 - 3.74)).¹⁷⁻¹⁹ Respondents who have adequate knowledge of NCDs 19.54 times more likely to have adequate practice of NCDs prevention when compared with participants with in adequate knowledge of NCDs (AOR = 19.54, 95 % CI: 11.49 - 33.21) (Table 2).

Variables	Categori es	Practice status Inadeq uate	COR (CI)	AOR (CI)
			Adequate	
Age group	< 25	171 59	1	1
	25 - 29	141	1.32 (0.87 - 1.99)	0.92 (0.43 - 1.97)
	30 - 34	65	2.14 (1.33 - 3.44)	0.32 (0.14 - 2.76)

	> 34	187	88	1.36 (0.92 - 2.01)	0.34 (0.17 - 3.71)
Educational status	No education	108	45	1 0.82 (0.52 - 1.32) 1.26 (0.80 - 1.98) 1.31 (0.85 - 2.02)	1 0.72 (0.36 - 1.47) 2.12 (1.01 - 4.44) 2.73 (1.38 - 5.41)
	Primary	158	54		
	Secondary	133	70		
	Above secondary	165	90		
Occupation	Housewife	113	49	1 1.51 (0.97 - 2.36) 1.25 (0.73 - 2.16) 1.36 (0.87 - 2.12) 0.47 (0.27 - 0.80) 0.58 (0.25 - 1.34)	1 1.70 (0.74 - 3.92) 5.14 (0.07 - 12.72) 2.36 (0.98 - 4.75) 2.42 1.76 (0.60 - 5.14)
	Govt employee	113	74		
	Farmer	59	32		
	Merchant	119	70		
	Students	128	26		
	Others	32	8		
Monthly income	= < 3578	226	5	11 1 1.05 (0.75 - 1.48)	1 2.21 (0.91 - 3.61)
	3578	170	91		
Getting information from HP	Yes	271	4	17 2.21 (1.63 - 3.01)	2.30 (1.42 - 3.74)
	No	293	85	1 1.92 (1.39 - 2.64)	1 0.89 (0.55 - 1.47)
Having family member with NCD	Yes	126	92	16 82 17	1 1 9.78 (6.97 - 13.71) 19.54 (11.49 - 33.21)
	No	438	7	1	1
Knowledge of NCD	Inadequate	462	1		
	Adequate	102	7		

Table 2. Factors Associated with Adequate Practice of Healthy Life Style for Prevention of Ncds Among Adult Residents of Selected Towns of North Shoa Zones Oromia Region Central Ethiopia June 2021.

DISCUSSION

The study was aimed to assess community knowledge of NCDs and its preventive practices. It was demonstrated that 31.5 % of them had adequate practices of healthy life style for NCD preventions. Less than two third of the residents have adequate practice and it needs essential intervention to increase the practice of healthy life. This figure is low when compared with studies conducted in different areas across the world. For instance study conducted in Sri Lanka the magnitude of practicing preventing behavior to prevent NCDs are 43 % consumed a healthy diet, while study among urban slum dwellers in Nairobi, Kenya showed that the practice of eating healthy diet and sufficient physical activity were 42.8 and 85.6 respectively.²⁰⁻²⁵ The variation might be due to socioeconomic differences. Participants with secondary and above secondary education were times more likely to have adequate practice of NCDs prevention than those with no education. This might be because of respondents those have high educational level might get information from different medias like written materials than no education. Also people with secondary and above educational level work in government and non - government education where accessibility of information is high. Similarly study conducted in Ghana revealed that there is a significant relationship between only some educational categories regarding the types of beliefs of NCD preventions.²⁶ so while planning for intervention to improve practice of healthy life style for prevention of non - communicable disease giving attention for lower educational level is important for the success of an intervention. Respondents who information from health professionals were more likely to have adequate practice of NCDs prevention when compared with those do not get

information from health professionals. This might be because of health professionals might give an advise to practice healthy life style. Study conducted in Jimma zone Manna district also indicated that respondents those have discussion with health care providers have good practice of NCDs prevention *i.e.* they have screening for NCDs before becoming pregnant.²⁷ To decrease the incidence of non - communicable diseases and increases healthy life style health professionals have to contribute their roles through disseminating health information while making contacts with their clients. Respondents who have adequate knowledge regarding NCDs were more likely to have adequate practice of non - communicable diseases prevention when compared with participants with in adequate knowledge of NCDs. This is because of the fact that participants with adequate knowledge know the benefit of health practice and unhealthy practices. Similarly, study from Nigeria indicated that there is there is a positive association between knowledge score and practices score of healthy life style. This study might have its own limitations since it is cross section study it is difficult to determine causal relationship.

CONCLUSION

Practices healthy life style for NCD prevention is low in the study area. While planning to increase practice of healthy life style which to decrease the incidence of NCDs emphasize have to be given for low educational level, those has no contact with health professionals and those lack awareness about NCDs. Efforts have to be made to increase the awareness of the community regarding NCDs.

DECLARATION

Funding: The financial cost for this study was supported by Salale University.

CONFLICTS OF INTEREST

No competing interests.

ETHICAL CONSIDERATION

Ethical approval was obtained from the ethical review committee of Salale University College of Health Science. Permission letters was obtained from the respective district and kebele administration before data collection.

CONSENT TO PARTICIPATE

Written informed consent was obtained from each participant before beginning the study.

CONSENT FOR PUBLICATION

Not Applicable.

AVAILABILITY OF DATA AND MATERIAL

All data generated during and / or analyzed during the study are available from the corresponding author on request.

CODE AVAILABILITY

Not Applicable.

AUTHORS' CONTRIBUTIONS

EL involved conceiving the idea, study design, data analysis, and interpretation, and managing the overall progress of the study. DG, TN, and LA were involved in study design, data analysis, and the writing up of the manuscript. HD, BSD, TA, DH, FT, GM, AW, and MT contributed to study design, data analysis, and revising the manuscript. The final manuscript was read and approved by all authors.

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