

Original Article

Knowledge about Non-Communicable Disease among Women in Selected Rural Community of Enayetpur, Sirajganj

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Abstract

Background: Non-communicable diseases (NCDs) are a leading cause of morbidity and mortality worldwide, particularly in low- and middle-income countries like Bangladesh. Women in rural communities are especially vulnerable due to limited access to health information and services.

Objective(s): To assess the knowledge and practices regarding non-communicable diseases among women in a selected rural community of Enayetpur, Sirajganj.

Materials and methods: This descriptive cross-sectional study was conducted among 145 women selected purposively from a rural community of Enayetpur, Sirajganj. Data were collected through face-to-face interviews using a semi-structured questionnaire. Information regarding socio-demographic characteristics, knowledge of NCDs, risk factors, preventive measures, and related practices was obtained and analyzed using descriptive statistics.

Results: The majority of respondents were aged 31-40 years (50.3%), with a mean age of 36.81±8.15 years. Most had primary level education (39.3%). Hypertension (64.8%), heart disease (62.1%), and diabetes (59.3%) were commonly identified as NCDs. Only 52.4% recognized NCDs as chronic conditions. Tobacco use (67.6%) and obesity (66.2%) were major identified risk factors. Regular exercise (69.0%) and healthy diet (66.2%) were recognized as preventive measures. However, only 54.5% had ever measured blood pressure, 33.1% had checked blood glucose, and 38.6% reported no physical activity.

Conclusion: Although knowledge regarding NCDs among rural women was moderate, gaps exist in understanding disease concepts and translating knowledge into practice. Community-based health education and improved access to preventive services are essential to reduce the burden of NCDs.

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Introduction

Non-communicable diseases (NCDs) have become a dominant global health concern, contributing substantially to morbidity, mortality, and economic burden. The World Health Organization (WHO) reports that NCDs are responsible for approximately 74% of all deaths worldwide, with cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes mellitus being the leading causes.¹ A significant proportion of these deaths occur prematurely, particularly in low- and

middle-income countries (LMICs), where health systems often face challenges in prevention, early detection, and long-term management of chronic conditions. Unlike communicable diseases, NCDs are typically long in duration and progress slowly, requiring sustained lifestyle modifications and continuous healthcare support.

Bangladesh is currently undergoing an epidemiological transition characterized by a shift from

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infectious diseases to non-communicable diseases. Over the past few decades, socio-economic development, urbanization, and demographic changes have significantly influenced disease patterns in the country. Recent estimates indicate that NCDs account for more than 67% of total deaths in Bangladesh, reflecting a growing public health challenge.² Factors such as unhealthy dietary practices, increased consumption of processed foods, sedentary lifestyles, tobacco use, and environmental pollution have contributed to this rising burden. Additionally, increased life expectancy has led to a higher prevalence of age-related chronic conditions.

Despite the increasing burden, the prevention and control of NCDs remain inadequate, particularly in rural areas of Bangladesh. Rural communities often experience disparities in access to healthcare services, health education, and preventive programs. Limited availability of trained healthcare personnel, insufficient screening facilities, and lack of awareness further exacerbate the situation. Moreover, traditional beliefs and misconceptions about chronic diseases often delay healthcare-seeking behavior, leading to late diagnosis and poor disease outcomes.³

Women in rural Bangladesh constitute a particularly vulnerable group in the context of NCDs. Gender-based inequalities, cultural norms, and socio-economic constraints significantly influence women's health status and access to care. In many rural settings, women have limited autonomy in making decisions regarding their own health, and their mobility is often restricted. As a result, they may have reduced exposure to health information and preventive services. Furthermore, women tend to prioritize family responsibilities over personal health, which may lead to neglect of early symptoms and delayed treatment seeking.⁴

Biological and lifestyle-related factors also increase women's susceptibility to NCDs. Nutritional deficiencies, obesity, lack of physical activity, and reproductive health-related issues can predispose women to conditions such as hypertension, diabetes, and cardiovascular diseases. The rising prevalence of overweight and obesity among Bangladeshi women, particularly in rural and semi-urban areas, is an emerging concern. Additionally, exposure to indoor air pollution from biomass fuel, which is commonly used for cooking in rural households, increases the risk of chronic respiratory diseases among women.⁵

Knowledge and awareness are key determinants in the prevention and control of non-communicable diseases. Adequate knowledge about risk factors, early warning signs, complications, and preventive strategies can empower individuals to adopt healthier lifestyles and

seek timely medical care. Conversely, poor knowledge and misconceptions can lead to unhealthy behaviors, poor adherence to treatment, and increased disease burden. Several studies conducted in Bangladesh have demonstrated that awareness regarding NCDs among rural populations, especially women, is often insufficient. Misunderstandings about causes, symptoms, and prevention strategies are common, highlighting the need for targeted health education interventions.⁶

Health education and community-based interventions play a crucial role in improving knowledge and promoting behavioral change. In Bangladesh, various government and non-government initiatives have been undertaken to address NCDs, including the establishment of NCD corners in Upazila Health Complexes and implementation of national NCD control programs. However, the effectiveness of these programs largely depends on community awareness and participation. Without adequate knowledge, the utilization of available services remains suboptimal.

Therefore, this study aims to assess the knowledge about non-communicable diseases among women in a selected rural community of Enayetpur, Sirajganj. The findings of this study are expected to provide valuable insights for public health professionals, policymakers, and healthcare providers in developing effective strategies to improve awareness and reduce the burden of NCDs among rural women in Bangladesh. Enayetpur, located in Sirajganj district, represents a semi-rural setting where socio-economic and healthcare challenges may influence the level of awareness regarding non-communicable diseases. Women in this area may face barriers similar to those observed in other rural parts of Bangladesh, including limited access to health information, cultural constraints, and inadequate healthcare facilities. Understanding their level of knowledge about NCDs is essential for identifying gaps and designing appropriate interventions tailored to their needs.

Materials and methods

This study was conducted using a descriptive cross-sectional design to assess the knowledge about non-communicable diseases (NCDs) among women in a selected rural community. The study was carried out in Khok Shabari village of Chauhali Upazila under Sirajganj District, Bangladesh. The data collection period extended from July to December 2024. The study population comprised women residing in the selected village. All women aged 21 years and above who were permanent residents of Khok Shabari village were considered eligible for inclusion.

A convenience sampling technique was employed to select the respondents due to feasibility and accessibility considerations. A total of 100 participants were included in the study. The inclusion criteria were women aged 21 years and above, permanent residents of the study area, and those who provided informed consent to participate. Women who did not provide consent, those who were temporary residents or visitors to the village, and those who were seriously ill at the time of data collection were excluded from the study. Data were collected using a semi-structured questionnaire designed to capture information on socio-demographic characteristics and knowledge related to non-communicable diseases, including risk factors, symptoms, prevention, and control measures. The questionnaire was pretested in a similar setting to ensure clarity, relevance, and reliability. Necessary modifications were made prior to final data collection.

The data collection was conducted through face-to-face interviews by the researchers, ensuring better comprehension of questions and accuracy of responses. Before data collection, each participant was informed about the purpose and objectives of the study. Collected data were checked, cleaned, and edited to identify inconsistencies and errors. The data were then entered into a computer and analyzed using Statistical Package for Social Sciences (SPSS) software version 27. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the findings. The analyzed data were presented in the form of tables, charts, and graphs to facilitate clear understanding and interpretation of the results.

The findings of this study can be effectively utilized to inform and design targeted health education and intervention programs aimed at improving awareness and prevention of non-communicable diseases among rural women in Enayetpur, Sirajganj. Health policymakers and local health authorities can use the insights to prioritize resource allocation for community-based awareness campaigns, with emphasis on lifestyle modification and early screening practices. Non-governmental organizations and healthcare providers may tailor their outreach activities by addressing the identified knowledge gaps and misconceptions. Furthermore, this study provides a baseline for future research and monitoring, enabling evaluation of the effectiveness of health promotion interventions over time. Ultimately, the findings contribute to strengthening public health strategies to reduce the burden of NCDs through culturally appropriate interventions in rural communities.

The study was conducted in accordance with established ethical principles. Prior to data collection, informed consent was obtained from each participant, and their participation was entirely voluntary. The purpose and procedures of the study were clearly explained to all respondents. Confidentiality and anonymity were strictly maintained, and all collected data were used solely for research purposes. Participants' privacy was protected throughout the study, and no identifying information was disclosed. As the study did not involve any invasive procedures, no physical risk was posed to the participants. Care was taken to ensure that no participant experienced any form of psychological, social, or economic harm. Participants had the full right to withdraw from the study at any stage without any consequences. The data were analyzed and reported in an aggregated manner to ensure that individual identities remained confidential.

Results

Table I presents the age distribution of the respondents included in the study. A total of 145 women participated, with ages ranging from 22 to 60 years. The findings indicate that the majority of the respondents belonged to the 31-40 years age group, accounting for 73 participants (50.3%), making it the most represented category. This was followed by the 41-50 years age group with 32 respondents (22.1%), and the 21-30 years age group with 31 respondents (21.4%). The least number of respondents were in the 51-60 years age group, comprising only 9 participants (6.2%). The mean age of the respondents was 36.81 years with a standard deviation of 8.15 years. The median and mode were both 35.0 years, suggesting that the central tendency of the data is concentrated around the mid-thirties. The minimum and maximum ages recorded were 22 and 60 years respectively.

Table I: Age Distribution of the Respondents

Age group	Frequency	Percent	Statistics
21-30 years	31	21.4	Mean: 36.81 Median: 35.0 Mode: 35.0 SD: 8.15 Minimum: 22.0 Maximum: 60.0
31-40 years	73	50.3	
41-50 years	32	22.1	
51-60 years	9	6.2	
Total	145	100.0	

Table II: Distribution of the respondents by education

Respondents' education	Frequency	Percent
Primary / Equivalent	57	39.3
JSC / Equivalent	23	15.9
SSC / Equivalent	39	26.9
HSC / Equivalent	23	15.9
Graduate and above	3	2.1
Total	145	100.0

Table II illustrates the educational status of the respondents participating in the study. Among the total 145 respondents, the majority had completed primary level education or its equivalent, accounting for 57 participants (39.3%). A considerable number of respondents had attained secondary level education, with 39 participants (26.9%) completing secondary school certificate (SSC) or its equivalent. Additionally, 23 respondents (15.9%) had completed junior school certificate (JSC) or equivalent, and an equal proportion (15.9%) had achieved higher secondary certificate (HSC) or equivalent level of education. Only a very small fraction of the respondents, 3 individuals (2.1%), had education at the graduate level or above.

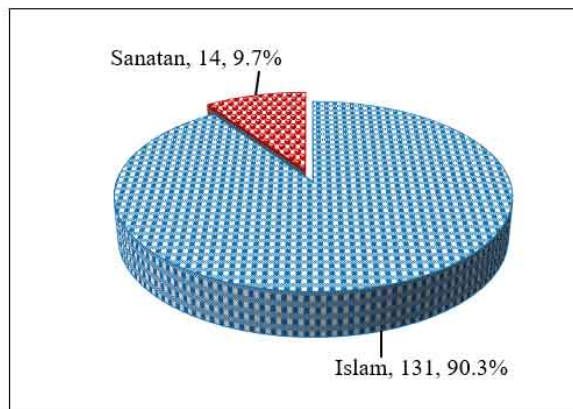
**Figure 1:** Distribution of the respondents by religion

Figure 1 shows the distribution of the respondents according to their religion. Out of the total 145 participants, the vast majority were Muslim, comprising 131 respondents (90.3%). In contrast, a smaller proportion of the respondents belonged to the Sanatan (Hindu) religion, accounting for 14 participants (9.7%).

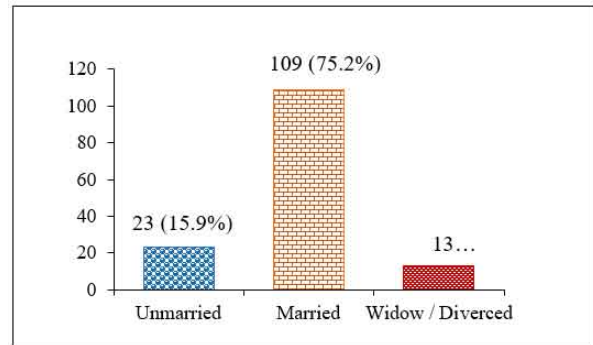
**Figure 2:** Distribution of the respondents by marital status (n=145)

Figure 2 presents the marital status of the respondents included in the study. Among the total 145 participants, the majority were married, accounting for 109 respondents (75.2%). This indicates that most of the women in the study were currently living in a marital union. A smaller proportion of the respondents, 23 individuals (15.9%), were unmarried. Additionally, 13 respondents (9.0%) were either divorced or widowed.

Table III: Respondents' identification of diseases as Non-Communicable Diseases (n=145)

Name of the disease	Frequency	Percent
Hypertension	94	64.8
Diabetes	86	59.3
Heart Disease	90	62.1
Cancer	82	56.6
Asthma	26	17.9
TB	34	23.4
COVID-19	34	23.4

* There were multiple responses

Table III shows the respondents' ability to identify different diseases as non-communicable diseases (NCDs). As multiple responses were allowed, the percentages exceed 100%. The findings indicate that a majority of respondents were able to correctly identify common NCDs. Hypertension was the most frequently recognized condition, identified by 94 respondents (64.8%). Heart disease was identified by 90 respondents (62.1%), while diabetes was recognized by 86 respondents (59.3%). Cancer was also identified as an NCD by 82 respondents (56.6%). However, the identification of asthma as an NCD was relatively low, with only 26 respondents (17.9%) recognizing it correctly, indicating limited awareness about chronic

respiratory diseases. In addition, some misconceptions were observed among the respondents. A notable proportion incorrectly identified communicable diseases as NCDs, with 34 respondents (23.4%) considering tuberculosis (TB) and an equal proportion (23.4%) identifying COVID-19 as non-communicable diseases.

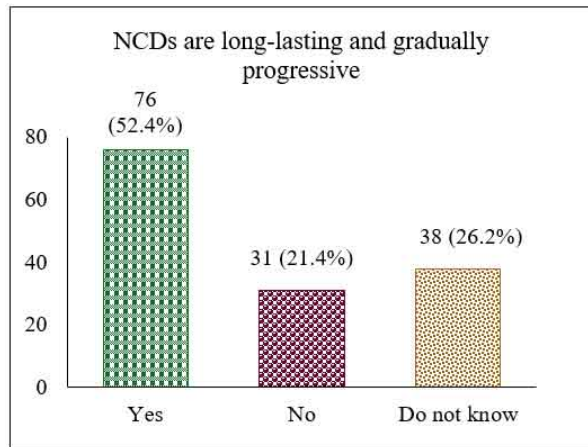


Figure 3: Respondents' awareness that NCDs are long-lasting and gradually progressive

Figure 3 shows respondents' knowledge regarding the chronic nature of non-communicable diseases (NCDs). Out of 145 respondents, 76 (52.4%) correctly identified that NCDs are long-lasting and gradually progressive. In contrast, 31 (21.4%) believed that NCDs are not long-lasting, while 38 (26.2%) were unsure or did not know. These findings indicate that just over half of the respondents have a clear understanding of the persistent and progressive

Table IV: Respondents' knowledge of risk factors for NCDs (n=145)

Risk factors	Frequency	Percent
Tobacco/ Bidi/ Cigarette use	98	67.6
Overweight/Obesity	96	66.2
Lack of physical activity	90	62.1
Irregular eating habits	90	62.1
Excess salt/oil intake	62	42.8
Family history	38	26.2
Don't know	22	15.2

* Multiple responses

nature of NCDs, whereas nearly half either have misconceptions or lack knowledge on this aspect.

Table IV presents respondents' knowledge of risk factors associated with non-communicable diseases (NCDs). Among the 145 respondents, 98 (67.6%) recognized tobacco, bidi, or cigarette use as a risk factor, followed by 96 (66.2%) who identified overweight/obesity. 90 respondents (62.1%) were aware that lack of physical activity and irregular eating habits contribute to NCDs. Additionally, 62 (42.8%) mentioned excess salt or oil intake, 38 (26.2%) recognized family history, and 22 (15.2%) did not know any risk factors. These results indicate that most respondents are aware of major lifestyle-related risk factors, while knowledge about hereditary factors is relatively lower.

Table V: Respondents' knowledge of preventive measures NCDs (n=145)

Ways to prevent NCDs	Frequency	Percent
Eating healthy food	96	66.2
Regular exercise	100	69.0
Avoiding tobacco	88	60.7
Routine health check-up	72	49.7

* Multiple responses

Table V presents respondents' knowledge regarding preventive measures for non-communicable diseases (NCDs). Among 145 respondents, 100 (69.0%) recognized regular exercise as a preventive measure, followed by 96 (66.2%) who identified eating healthy food. Avoiding tobacco was acknowledged by 88 (60.7%), and 72 (49.7%) mentioned routine health check-ups. These findings indicate that most respondents are aware of lifestyle-based strategies to prevent NCDs, with knowledge being higher for exercise and healthy diet, while awareness of routine medical check-ups is comparatively lower.

Table VI illustrates the preventive practices of respondents regarding non-communicable diseases (NCDs). Among the 145 respondents, 79 (54.5%) reported that they had ever measured their blood pressure, while 66 (45.5%) had never done so. Regarding blood glucose monitoring, only 48 (33.1%) had ever checked their blood glucose level, whereas a majority, 97 (66.9%), had never undergone such testing. In terms of physical activity, 36 (24.8%) reported engaging in walking or exercise every day, 41 (28.3%) did so one to two days per week, and 12 (8.3%) exercised three to five days per week. However, a considerable proportion, 56 (38.6%), reported never engaging in physical exercise. With respect to

tobacco consumption, 16 (11.0%) of respondents reported using tobacco, while the majority, 129 (89.0%), did not.

Table VI: Respondents' Practices to prevent NCDs (n=145)

Practices	Frequency	Percent
Ever measured blood pressure		
Yes	79	54.5
No	66	45.5
Ever checked blood glucose		
Yes	48	33.1
No	97	66.9
Walking or doing physical exercises		
Every day	36	24.8
One-two days	41	28.3
3–5 days	12	8.3
Never	56	38.6
Tobacco consumption		
Yes	16	11.0
No	129	89.0

Discussion

The present study explored the knowledge and preventive practices regarding non-communicable diseases (NCDs) among women in a selected rural community of Enayetpur, Sirajganj. The findings highlight both encouraging levels of awareness and significant gaps between knowledge and actual health practices.

The socio-demographic profile of the respondents revealed that the majority were aged between 31-40 years, with a mean age of 36.81 ± 8.15 years. This age group represents a critical segment of the population, as women in this stage are often central to family health decision-making and caregiving roles. Similar age distributions have been reported in community-based studies in Bangladesh and other South Asian countries.^{7,8} Therefore, improving knowledge among this group can have a multiplier effect on household-level health behaviors. However, the educational status of the respondents was relatively low, with most having only primary or secondary education. This is important because education is a well-established determinant of health literacy. Previous studies have consistently shown that individuals with lower educational attainment tend

to have limited understanding of chronic diseases and preventive strategies (9). This may partly explain the observed gaps in knowledge and practices in the current study.

In terms of knowledge about NCDs, the majority of respondents were able to correctly identify common conditions such as hypertension, heart disease, diabetes, and cancer. This finding reflects the increasing visibility of these diseases in Bangladesh due to rising prevalence and ongoing public health campaigns.^{10,11} However, knowledge was not uniform across all conditions. Only a small proportion correctly identified asthma as an NCD, suggesting limited awareness about chronic respiratory diseases. Moreover, a considerable number of respondents misclassified communicable diseases such as tuberculosis and COVID-19 as NCDs. This indicates conceptual confusion regarding disease classification, which has also been observed in other low-resource settings.¹² Such misconceptions may hinder appropriate health-seeking behavior and disease prevention efforts.

Understanding the chronic nature of NCDs is crucial for their effective management and prevention. In this study, only about half of the respondents recognized that NCDs are long-lasting and gradually progressive. This limited awareness is concerning because it may reduce the perceived importance of early diagnosis, long-term treatment adherence, and lifestyle modification. Comparable findings have been reported in similar rural populations, where knowledge about the chronicity and asymptomatic progression of NCDs remains inadequate.¹³ Without a clear understanding of disease progression, individuals may delay seeking care until complications arise.

The study also assessed knowledge of risk factors for NCDs. Encouragingly, a majority of respondents identified key modifiable risk factors such as tobacco use, overweight/obesity, physical inactivity, and unhealthy dietary habits. These findings align with other studies conducted in low- and middle-income countries, where public health messaging has successfully increased awareness of behavioral risk factors.^{14,15} However, knowledge about non-modifiable risk factors, particularly family history, was relatively low. This is consistent with previous research indicating that rural populations often have limited awareness of genetic susceptibility and its role in disease development.¹⁶ This gap suggests the need for more comprehensive health education that includes both modifiable and non-modifiable risk factors.

Regarding preventive measures, the respondents demonstrated a moderate to good level of knowledge. Most participants recognized the importance of regular exercise, healthy diet, and avoidance of tobacco. However, fewer respondents acknowledged the role of routine health check-ups in preventing NCDs.

This finding is important, as early detection through screening is a key component of NCD control strategies. Similar patterns have been observed in other studies, where knowledge about lifestyle modifications is relatively higher than awareness about preventive healthcare services such as regular screening.¹⁷ This may be due to limited access to healthcare facilities, lack of awareness, or low perceived need for preventive check-ups.

Despite having reasonable knowledge, the study revealed a notable gap between knowledge and practice. Although more than half of the respondents had ever measured their blood pressure, only one-third had checked their blood glucose level. This suggests that screening for hypertension is more common than for diabetes, possibly due to greater availability of blood pressure measurement services at the community level. Similar disparities in screening practices have been reported in other studies conducted in Bangladesh and similar settings.¹⁸ Furthermore, a significant proportion of respondents reported inadequate physical activity, with nearly two-fifths never engaging in exercise. This is concerning, as physical inactivity is a major modifiable risk factor for NCDs.

The discrepancy between knowledge and practice observed in this study is a well-documented phenomenon in public health. Even when individuals are aware of healthy behaviors, various barriers—such as socioeconomic constraints, cultural norms, lack of time, and limited access to resources—can prevent them from adopting these practices.¹⁹ In rural Bangladesh, women may face additional challenges, including household responsibilities, restricted mobility, and limited autonomy in decision-making, which can further hinder engagement in preventive behaviors.

Encouragingly, the prevalence of tobacco use among respondents was relatively low. This finding is consistent with other studies among rural women in Bangladesh, where tobacco consumption is generally lower compared to men due to cultural and social factors.²⁰ However, continued efforts are needed to maintain and further reduce tobacco use, particularly considering the rising availability of smokeless tobacco products.

Overall, the findings of this study suggest that while awareness of NCDs and their major risk factors is moderately good among rural women, important gaps remain in understanding disease concepts, particularly regarding classification and chronicity. More importantly, the translation of knowledge into practice is insufficient. This highlights the need for comprehensive, community-based interventions that not only improve knowledge but also address barriers to behavior change. Health

education programs should emphasize the importance of regular screening, physical activity, and long-term disease management. In addition, strengthening primary healthcare services and increasing access to affordable screening facilities could play a crucial role in improving preventive practices.

Conclusion

The present study reveals that women in the selected rural community of Enayetpur, Sirajganj possess a moderate level of knowledge regarding non-communicable diseases (NCDs), particularly in identifying common conditions and major lifestyle-related risk factors such as tobacco use, unhealthy diet, and physical inactivity. Awareness of preventive measures, especially regular exercise and healthy eating, was also relatively satisfactory. However, important gaps remain in understanding the fundamental concepts of NCDs, including their chronic and progressive nature, as well as in distinguishing them from communicable diseases. Knowledge regarding non-modifiable risk factors, such as family history, and the importance of routine health check-ups was comparatively limited. Despite having reasonable knowledge, the translation of this knowledge into practice was inadequate. A significant proportion of respondents had never undergone blood glucose testing, and many reported insufficient physical activities, indicating a clear gap between awareness and actual preventive behaviors.

Therefore, there is a need for targeted community-based health education programs focusing not only on improving knowledge but also on promoting behavioral change. Strengthening primary healthcare services, increasing access to screening facilities, and raising awareness about the importance of regular health check-ups are essential to enhance early detection and prevention of NCDs. Such interventions will be crucial in reducing the growing burden of NCDs in rural Bangladesh.

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