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Information Minorities: Knowledge, Attitude and Behavior of Students with Hearing Disabilities about HIV/AIDS preventive Measures

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Abstract

The study has had three fold objectives: to investigate hearing impaired students knowledge, attitude and behavior about HIV/AIDS preventive measures, to find out whether or not knowledge, attitude and behavior of the hearing impaired students about HIV/AIDS preventive measures relate each other and to determine whether or not difference exists regarding knowledge, attitude and behavior about HIV/AIDS preventive measures within the groups of the hearing impaired across the sexes. To materialize these objectives, from a total of 151 hearing impaired students, 80 students (46 males and 34 females) were selected by stratified followed by simple random sampling technique. And male and female students from each stratum were taken proportionally. The result of this research showed that nearly half (62.8%) and below half (37.2%) of the hearing impaired students had correct knowledge and incorrect knowledge about HIV/AIDS preventive measures respectively. Concerning their attitude, below half of the respondents had unfavorable (48%) and favorable attitude (43.8%) about the preventive measures, and 8.2% of the respondents were in dilemma to decide whether or not they have favorable / unfavorable attitude. 42.2 % of the hearing impaired students did not practice any of the precautions not to be infected by HIV/AIDS, but only 17.8%, and 42% of the respondents practice the preventive measures sometimes. And there was statistically significant relationship among knowledge, attitude and behavior about HIV/AIDS preventive measures ($X^2=649.410$, $df=4$, $P=0.000$). There was no statistically significant difference in knowledge($X^2 =0.042$, $df=1$, $P= 0.877$) and behavior($X^2=0.496$, $df=1$, $P=0.481$) between female and male respondents. However, there was a significant difference in attitude between the sexes of the respondents about HIV/AIDS preventive measures ($X^2=13.946$, $df=1$, $P=0.000$). That means females have more positive attitude (mean rank of 653.15) to the practice the preventive measures than males do have (mean rank of 579.17). Finally, mounting efforts should be made to adapt the teaching of HIV/AIDS to the special needs of the hearing impaired.

Introduction

Unfortunately, data on the incidence, prevalence and situation of persons with disabilities are fragmented, incomplete and sometimes misleading (Ethiopian Federation of Persons with Disabilities (EFPD), 2001; and Tirusaw, 2000). However, the 1984 population census of the country gave a good picture of the magnitude of disabilities and best describes the proportional number of the different categories of disabilities. As a result, 42.2 % of the disabled are visually impaired. This comprises around 1.5 % of the total population of the country. On the other hand, from the total population of the disabled, 7.8 % are with hearing impairment. This comprises around 0.28 % from the total population of the country; 6.5 % leprosy from the whole population of the disabled and 0.23 % from the whole population of the country; 2.0% epilepsy from the disabled population and 0.07% from the total population; and 24.0 % others from the total population of the disabled and 0.87 % of the total population.

The base-line survey of disabilities was also carried out by Tirusaw, Hannu, Agdew and Daniel (1995) and the result of the survey shows the proportion of different disability categories as follows: 30.8 % physical impairment; 30.5 % visual impairment; 14.9 % hearing impairment; 10.3 % chronically ill; 6.5 % mentally retarded and 7.1% others. World Health Organization (WHO), (1999) also estimated that 10.0 % of the population in the developing countries are persons with disabilities.

Variation by specific disability in percentage distribution from both reports might indicate the presence of drawbacks to determine the rate of prevalence of disabilities. According to Kirk and Gallapher (1986), Hallahan and Kaufman (1988), and Taylor, Sternber and Richard (1995) inadequate definition of the target group and unwillingness of parents to disclose that they have a child with disabilities are the major drawbacks to determine the prevalence of disabilities. Tirusaw (2000), moreover, explained that the presence of diversified, pre and post natal disability factors like infectious diseases, difficulties contingent to delivery, under nutrition, civil strifes and periodic episodes of draught and famine and absence of early primary and secondary prophylactics at large has brought an increase in the rate of the phenomena. Therefore, we are compelled to

assume that in Ethiopia persons with disabilities comprise 10% of the total population (about 80 Million), as estimated by WHO (1999). At this juncture, it is worth interrogating the overall issues of HIV/AIDS in connection with persons who have special needs.

HIV/AIDS, at present, has far elided biomedical preventive measures. The most important mechanism of HIV/AIDS prevention is giving correct and up-to-date information about the disease. The Federal Democratic Republic of Ethiopia (FDRE), therefore, is duty bounded to design policies and strategies to halt the spread of HIV/AIDS. This could be possibly be done by providing accurate and accessible information for all citizens. This would prevent the distraction of the most important resource of the country-human resource. As a result, there are efforts of creating awareness and changing attitudes of citizens about HIV/AIDS. It, thus, seems possible to categorize the above mentioned efforts in to three: the visual, aural and audio-visual approaches.

The visual approaches of HIV/AIDS education include such materials as magazines, newspapers, leaflets, widely displayed posters (of HIV/AIDS infected individuals), sign language, etc. Obviously, these approaches transmit a great deal of information about HIV/AIDS and are accessible for the hearing impaired population. The aural approaches include, radio broad casts, awareness raising meetings, anti HIV/AIDS clubs, questioning-and- answering sessions, invited guest speakers and the like. Although these approaches give great opportunity to acquire information about HIV/AIDS, they are not accessible for the hearing impaired individuals. Other approaches include, TV programmes, movies, theater presentations, total communication approaches, and other audio-visual approaches. These approaches are equally accessible and inaccessible for the hearing impaired individuals: the visual part is accessible and the audible part is inaccessible.

As stated above, HIV/AIDS education approaches do not seem accessible for the hearing impaired individuals. We may say these are individuals who are information minorities. Consequently, this might lead us to doubt their knowledge, attitude and behavior about

HIV/AIDS, in general, and its preventive measures in particular. Though this is the fact, there has not been any research undertaken in Ethiopia on persons with special needs about HIV/AIDS, in general, and its preventive measures in particular. Are we letting them die as the result of ignorance? Hence, the study is an attempt made to find answers for the following research questions.

1. Do hearing impaired students have proper knowledge, attitude and behavior about HIV/AIDS preventive measures?
2. How do knowledge, attitude and behavior of the hearing impaired students about preventive measures of HIV/AIDS relate each other?
3. Are there differences regarding knowledge, attitude and behavior about HIV/AIDS preventive measures within the groups of the hearing impaired by sexes?

Definition of Terms

Knowledge: clear and certain information of HIV/AIDS preventive measures that could be judged either correct or incorrect.

Attitude: A tendency to evaluate HIV/AIDS preventive measures with some degree of favor or disfavor (Stroebe and Stroebe, 1996).

Behavior: The practical involvement of an individual in activities which do not expose him/her for HIV/AIDS infection (i.e., applying preventive measures of HIV/AIDS effectively).

Preventive measures: Practicing abstinence, persistent use of condom and being faithful to single and healthy life time partner.

Hearing impairment: Hearing is disabled to an extent of 70 Db or greater that precludes the understanding of speech through the ear (Moore, 1996).

Research Methodology

The study uses cross sectional research design and it was delimited to hearing impaired students in the schools of Region 14 Administration (Addis Ababa), specially students who are enrolled in the regular schools of secondary cycle secondary education (grades 9 and 10) and the preparatory grades (Grades 11 and 12). Students in these grade levels are assumed to be found at the puberty/adolescence stage which is the time of uncertainty and a time where different patterns of boy-girl relationship develop. These strains and uncertainties are greatly intensified for the disabled individuals (Moore, 1996). This might have an indication that the hearing impaired students have been involved in risky behaviors of HIV/AIDS infection.

Target population of the study

According to the information obtained from the Special Education Program, Office of the Region 14 Administration Education Bureau, hearing impaired students were not enrolled in all secondary schools of the region. Schools with high number of enrolment were selected by using purposive sampling technique and are indicated in the table below.

Table 1: Total Number of Hearing Impaired Students in the Sample Schools

Schools	Hearing Impaired Students		
	Male	Female	Total
The then Minilik Comprehensive Secondary School, now preparatory school.	47	32	79
The then Entoto Vocational School, TVET College.	61	11	72
Total	108	43	151

Respondents of the study, hearing impaired students, were first stratified according to their sexes. After this task was completed, from a total of 151 hearing impaired students, 80 students were selected by using simple random sampling technique. Male and female students from each stratum were taken proportionally. An audiologist had measured their hearing acuity. However, the following students were not included in the study for they don't qualify the selection criteria:

- Hearing impaired students whose hearing acuity is below 70 Db.
- Individuals who have additional disabilities.

There were three hearing impaired respondents who were excluded by the exclusion criteria and another three respondents were substituted by using the same sampling procedure and same exclusion criteria as before. In the end, 46 male and 34 female hearing impaired students, were selected as respondents of this study.

Instruments

Questionnaire: A semi-structured questionnaire was used to assess hearing impaired students' knowledge, attitude and behavior towards HIV/AIDS preventive measures. The questionnaire had three parts. Part one was designed to assess the respondents' background, Part Two tries to examine knowledge about HIV/AIDS preventive measures. Thus, the later part had 'Yes' and 'No' options concerning the overall causes, symptoms, effects and preventive measures of HIV/AIDS. The third part of the questionnaire assesses respondents' attitude towards preventive measures. Respondents, therefore, were requested to indicate their response on the three point Likert scale (Agree, Undecided and Disagree). This was intended to avoid confusions respondents might have in clearly indicating their responses on a 5-point scale ranging from strongly agree to strongly disagree. The final part deals with precautions taken by respondents not to be involved in risky behaviors of HIV/AIDS infection.

Interview Guides: In addition to the questionnaire, interview guides for the sample schools' unit leaders, directors and students of anti-HIV/AIDS club leaders were used and developed in English and translated into Amharic and back into English (the purpose of doing this was the same as that of the questionnaire). The interview guides generally focus as to how the education of HIV/AIDS has involved the hearing impaired individuals. The interview sessions were held in Amharic so as to facilitate the mutual understanding between the interviewer and the interviewees.

Pilot Study: The purpose of piloting was to check appropriateness, understandability, acceptability and completeness of the items and evaluate the completeness and proper

recording of responses of each respondent. For the pilot study, 10 hearing impaired students (5 male and 5 female) were selected by simple random sampling technique. Dropouts were also approached with the help of the National Association for the Deaf and have been involved in the pilot study. The exclusion criteria which are used to screen subjects in the main study were also employed to screen subjects for the pilot study.

Face to face contact was made with all respondents while distributing the questionnaire to them. They were informed by the research assistants to note down any ambiguous words, phrases or sentences. As soon as they finished, discussion was held and many of them had expressed their feelings about the items and pointed out the items that are not clear to them and repetitive. Finally, the responses of the pilot group were subject to item analysis and as a kind of discrimination index. Correlation of items with the over all total were computed. According to Ebel and Frisbie (1986) discrimination index of item 0.40 and above are very good; 0.30- 0.39 reasonably good; 0.20-0.29 marginally good and bellow 0.19 poor items to be rejected. In this study, therefore, the criterion value for the discrimination index was set to be $r = 0.30$. Accordingly, items with coefficient 0.30 and above are accepted. The rest 7 were rejected. Reliability of instrument was assessed by computing KR 20 and KR 21 using the data collected during the pilot. The computation yielded reliability coefficient of 0.627 and 0.605 respectively. These values clearly show that the instruments seem to be highly reliable (Ebel and Frisbie, 1986).

Procedure of data collection

While interview was conducted by the principal investigator, the questionnaire was administered by hearing persons who are fluent in sign language. These methods of administering the questionnaire, for one thing, helps to establish rapport easily with the respondents and, for the other thing, respondents face any difficulty, especially comprehension difficulty (if any) the administrators are capable enough to search for and give immediate solutions. To these end, two research assistants were selected by establishing a minimum criterion of fluency in sign language. Training of the research assistants, therefore, was given for half a day through lectures, discussions and demonstrations by the principal investigator. Since the study inquires about the

respondents' private life, they might be reluctant to give complete answers. This anticipated problem was solved by informing respondents the confidentiality of their responses.

Method of Data Analysis

The Multi- dimensional Chi-square test (Brace, Kemp and Snelgar, 2003) was used in two ways: as a test of association among the dependent variables (knowledge, attitude and behavior) and as a test of difference in knowledge, attitude and behavior by sexes of the respondents. In a statistical analysis $\alpha = 0.05$ was considered to accept or reject the null hypothesis. To give flesh to the results of the data analyzed through statistical tools, data gathered through interview guides were analyzed in the qualitative terms. Of course, percentage distributions/descriptive statistics were also used to know the proportion of the hearing impaired students who have correct knowledge, positive attitude and proper behavior about HIV/AIDS preventive measures.

Results and Discussion

Knowledge, attitude and behavior towards HIV/AIDS preventive measures of students with hearing Impairment

The result of this research shows that about 63 % and below half (37.2%) of the hearing impaired students had correct knowledge and incorrect knowledge about HIV/AIDS preventive measures, respectively. Concerning their attitude, below half of the respondents had unfavorable (48%) and favorable attitude (43.8%) about the preventive measures, and 8.2% of the respondents were in dilemma to decide whether or not they have favorable/unfavorable attitude about the preventive measures. 42.2 % of the hearing impaired students did not practice any of the precautions not to be infected by HIV/AIDS, only about 17.8% and 42% of the respondents practice the preventive measures sometimes.

Percentage distributions of respondents by correct knowledge, favorable attitude and proper behavior are more or less encouraging. This remains so for people with hearing

impairment are marginalized from the education of HIV/AIDS in countries like ours. This response was also verified by all anti-HIV/AIDS club leaders, directors and unit leaders of the sample schools. They were thus asked if they have tried to address the special needs of the hearing impaired students in connection with the education of HIV/AIDS and its preventive measures. Respondents too, were asked to specify how they or any other person can use condoms. They replied that they could read the instruction written on the cover page of condoms and apply it (76.3%). The rest (23.7%) gave a very general response that they could apply the education given by the Ethiopian National Association for the Deaf on how of using condoms.

From the responses given, one could argue that hearing impaired students are more affiliated to their association than their schools in acquiring information about HIV/AIDS. It might be explained in terms of linguistic barriers. In schools, there is no common language, the school community uses spoken language and students with hearing impairment use sign languages; however, in their association the community uses the sign language which allows the hearing impaired students to mingle with and acquire information about HIV/AIDS.

Respondents were asked “What are the modes of transmission for HIV/AIDS?” In this regard, 71.2% of the respondents have had correct knowledge and 28.8% were found to have misunderstandings on how HIV/AIDS could and could not be transmitted. The misunderstandings include; contaminated clothes (2.5%), social kissing (2.5%) sharing toilets (11.3%) and mosquitoes and insect bites (12.5%). The misunderstandings of HIV/AIDS modes of transmission might have contributed to the gaps in knowledge on all the three main preventive measures (abstinence, being faithful and condom use) about the disease. These are if a person is abstained from sex, it means that s/he is free from HIV/AIDS (24.3%); condom protects one from contracting HIV/AIDS (8.2%) and being faithful to different persons at different times prevent one from contracting HIV/AIDS (5.1%). This implies that students with hearing impairment need to be educated as to when and how the preventive measures could be applied and be effective. Apart from this, the misunderstandings on the modes of transmission might affect their social

interaction which is one of the most important ways to acquire information on any issue, in general, and HIV/AIDS in particular.

The possible explanation for gaps in knowledge might be societies' prejudice (Briggs, 1995). Societies consider disabled individuals as if they were asexual. Also, they consider educating disabled children is like a waste of money (Scholl, 1986) since God has already cursed them. The reality, however, is the reverse. This prejudice coupled with our societies' taboo of discussion about sexual matters may make students with hearing impairment uncomfortable to seek information on how to protect themselves from HIV/AIDS infection and might make pertinent bodies not to make any attempt to design education on HIV/AIDS preventive measures taking the special needs of the hearing impaired students in to account. Therefore, these misunderstandings might have contributed for the presence of gaps in knowledge on HIV/AIDS preventive measures since clear vision on modes of transmission directly relates with applications of HIV/AIDS preventive measures.

Generally, the result of this research is in line with Duncan, Dancer, Highly, Detholyn and Gibson (1997) who surveyed 129 students in grades 9-12 and found out that they had extremely limited knowledge of HIV/AIDS, with correct answer to only 8 of the 35 questionnaire items designed to measure their knowledge level. Other researchers had also assessed the knowledge level of hearing impaired individuals by presenting a specific knowledge questions bout the disease. The Florida HIV/AIDS Surveillance Data office (2001) also presented the question "What is AIDS?" for 279 individuals with hearing impairment. The statistics revealed the following: 53.8% correct answer, 11.8% incorrect answer, 30.5% do not know and 3.9% missing. This shows that almost half of the respondents had given incorrect answers for this vital questions regarding knowledge. Moreover, the office has asked another question "What does HIV negative mean?" Some of the hearing impaired individuals said it means "I have the virus" (40.2 %), while others said "I do not know the virus" (28.2%), others replied "I do not know" (23.4 %) and missing (8.2%). This indicates that the vast majority of the hearing respondents have misunderstandings about the diagnostic results of HIV/AIDS.

Concerning these misunderstandings, the American Psychologists Association (APA) (1998) stated that when you tell to the hearing impaired person that s/he is HIV positive, you may notice that s/he would smile because many hearing impaired people interpret the word “positive” as something good. Doreen, who is a deaf professional working with the deaf and for the deaf people narrated her experience when she finds out that her–sister-in-law had HIV/AIDS and in retrospective she realized that family member could be infected by her sister’s–in-law perspiration (Collins and Smalley, 1998).

Regarding the respondents’ behavior on preventive measures, the results are not interesting and encouraging. This is because only 17.8% of the hearing impaired respondents had practiced preventive measures. The vast majorities of the respondents were at risk of HIV/AIDS infection since few practice preventive measures some times (42%) and others didn’t practice at all (40.2%).

According to Ajzen and Fisherbein (1980), attitude towards a behavior is defined as the sum of “evaluative beliefs” about the consequence of performing the behavior in question (HIV/AIDS preventive measures). Any evaluative belief contains both an expectancy and value element. The majority of the hearing impaired respondents, thus, might have evaluated practicing HIV/AIDS preventive measures, especially condom use, in terms of what other people think about their behavior than what they personally benefit from applying HIV/AIDS preventive measures. Thus, they would not be inclined to buy and use condoms. As for faithfulness and abstinence, the expectancy element is important in our society as the value element.

Respondents were asked whether their impairment has an effect in their intentions of using condoms. In this regard, the question “how much effect do you think your hearing impairment has on your intentions of using condoms?” was presented to respondents. 13.7% of the hearing impaired respondents replied high, 26.3% said low and 60% said not at all. That means being hearing impaired person is a limiting factor to practice the preventive measures.

Relationship among knowledge, attitude and behavior of the hearing impaired students about HIV/AIDS preventive measures

Table 2: Summary Table of Chi-Square Test on the Association of knowledge, Attitude and Behavior of the Respondents about the Preventive Measures of HIV/AIDS

	Response Categories			Value	df	P
	-1	0	1			
Knowledge	271	-	449	649.410	4	0.000*
Attitude	576	98	526			
Behavior	257	269	114			

$\alpha=0.05$

The result of the analysis indicates that there was statistically significant relationship among knowledge, attitude and behavior about HIV/AIDS preventive measures within the groups of the hearing impaired students ($X^2=649.410$, $df = 4$, $P = 0.000$). Confirming this relationship Daniel (1996) disclosed the presence of strong relationship ($P < 0.001$) between respondents' perceived risk of HIV/AIDS infection and respondents' use of condom. Moreover, the association between perception of risks of the disease and change in actual behavior (practice) was reported by Abrahm (1991). Feverstein (1979) in Tuirusaw (2000) claimed that one of the most typical traits of all human is the capacity to be modified as a result of new learning. This significant relationship might indicate that the dependent variables (knowledge, attitude and behavior) don't exhibit the quality of independence.

The above research findings are in line with the standard conception of attitude, which states that attitudes exert a directive influence on behavior. This means it is possible to restore confidence in the utility of attitudes as predictor of behavior and conceptualization of the supposedly link between attitudes and behavior. Thus, the discovery of the association might have promising implication to change behavior problems, in general, and HIV/AIDS, in particular, by increasing knowledge about the behavior in question.

Research finding on knowledge about HIV/AIDS and the subsequent attitudinal and behavioral change of using HIV/AIDS preventive measures, however, did not all lead to

similar conclusions. In this regard, Zinabu (199) indicated that there is no association between knowledge of HIV/AIDS preventive measures and the subsequent behavioral change to use the preventive measure (P= 0.512). Besides, Misganaw and Fekadu (1996) stated that the association between knowledge scores with attitude was not statistically significant. Wicker (1969) after reviewing the relationship between people’s verbally expressed attitude and behavior, he found close relationship between verbally expressed attitude and over behavior only in very few cases, the typical result being one of the slightest association, or no association at all. Simkins and Herndrick (1987) indicated that the university students of Missouri came up with high level of knowledge about HIV/AIDS but there has been little change in applying the preventive measures. Beyene (1997) concluded that students’ attitude towards HIV/AIDS and their protective behavior don’t match with the relatively high level of knowledge they have. Moreover, Ashebir (1995) found out that changes in attitude due to the advent of AIDS is very minimal, revealing that message based AIDS education used so far is not sufficient to bring behavioral change. By and large, these studies (i.e., studies abroad and in our locality) may indicate that the problem of using preventive measures of HIV/AIDS infection has gone deeper than ignorance.

Knowledge, attitude and behavior about HIV/AIDS preventive measures by sexes of respondents with hearing impairment.

Table 3: Summary of Chi-Square Test on Knowledge, Attitude and Behavioral differences of Respondents as a function of their sexes

		Mean Rank	Test Statistics	df	P
Knowledge	Female	362.09	0.024	1	0.877
	Male	359.86			
Attitude	Female	653.15	13.946	1	0.000*
	Male	579.17			
Behavior	Female	328.00	0.496	1	0.481
	Male	317.47			

$\alpha=0.05$

The result of the analysis using Chi-Square test in the above table shows that there was no statistically significant difference in knowledge ($X^2 = 0.042$, $df = 1$, $P = 0.877$) and behavior ($X^2 = 0.496$, $df = 1$, $P = 0.481$) between female and male respondents of the study. However, there was a significant difference in attitude depending on the sexes of the respondents ($X^2 = 13.946$, $df = 1$, $P = 0.000$). That means females have more positive attitude (with mean rank of 653.15) to the practice of the preventive measures than males do have (with mean rank of 579.17).

There are research findings indicating that the presence of knowledge difference is inherited to the sexes. This seems adhering to the stereotypical notions of societies that females are usually labeled as biologically inferior than males including their cognitive competencies. For instance, Florida HIV/AIDS Surveillance Office (2001) explained that it is gender/sex which is an accurate predictor for knowledge difference on HIV/AIDS preventive measures. The result of this research, however, refutes the surveillance offices' finding and confirms with the research finding of Charles, Mekonnen and Tesfaye (1991) who disclosed that the respondents' sex doesn't seem to have a significant influence on acquiring knowledge about HIV/AIDS and preventing oneself from HIV/AIDS infection.

The finding of this research reveals that there is an attitude difference between the sexes: female respondents with hearing impairment have more favorable attitude than male respondents. This quiet contradicts the findings of Werner (1995) which has shown that females seem to be more fatalistic in their attitude than males towards HIV/AIDS. And explain the rationale in such away that more females (15%) than male (6%) believe that there is no way to avoid contracting HIV/AIDS. In connection with the findings of this research, here are a number of issues worth discussing which could possibly explain the presence of significant difference in attitude between sexes.

As explained earlier preventive measures of HIV/AIDS infection includes abstinence from sexual intercourse, being faithful to only one sexual partner, and condom use. In cultural terms, these phenomena, for instance abstinence has different values attached to females and males. Girls who abstained from sexual intercourse have been given more

prestige and value than boys. Regarding faithfulness, the same holds true for males and females in that females will be considered as prostitutes if they have more than one sexual partner and will be stigmatized by the society. One more thing that is included and defined as HIV/AIDS preventive measure is condom use. Condom use, as a method of contraception may be preferred more by females than males, for males don't experience pregnancy, abortions and/or birth which are only experienced by females and have an effect on their prestige and social status.

Recommendations

- Mounting efforts should be made by all pertinent bodies to adapt the education of HIV/AIDS with the special needs of students with hearing impairment. One way of doing this could be giving training in sign language to educators of HIV/AIDS so that they could easily adapt to the needs of these people and transmit their message with out any communication barrier.
- There is a need for a more detailed and comprehensive investigation which includes many more variables in a wider scope so as to further strengthen the findings of the study and to give firm conclusions.

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