

**Qualitative study to explore the knowledge and attitude of  
pregnant women regarding HIV/AIDS testing in  
Kotayk region and in Yerevan, Armenia**

Utilizing Professional Publication Framework

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## **Abstract**

*Introduction:* During the last 10 – 15 years the spread of Sexually Transmitted Diseases (STDs) and the introduction of a new epidemic of Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) have become a threat for the health of many people in Armenia. According to the World Health Organization (WHO), at the end of 2004, an estimated 39.4 million (35.9-44.3 million) people globally were living with HIV. In many parts of the developing world, the majority of new infections occur in young adults, with young women especially vulnerable. The aim of the study was to explore the knowledge and attitude of pregnant women regarding HIV/AIDS testing in Kotayk region and in Yerevan, Armenia in order to reveal possible barriers for undergoing HIV testing of pregnant women in prenatal care setting.

*Methods:* An exploratory qualitative study was chosen as the research design. The selection of health care facilities was purposive. Overall, 8 health care facilities were chosen: 4 in a rural region: Kotayk region (marz) and 4 in an urban region: Yerevan. A sample each from 32 pregnant women, who were registered in Women's Consultation Departments for prenatal care, were recruited: 16 from the Kotayk region and 16 from Yerevan. Semi-structured in-depth interview was used for data collection. Data analysis was done by hand.

*Results:* The data obtained from this study showed that pregnant women were aware of the signs of sexually transmitted diseases, but not so aware of transmission modes. Study participants were not clear in their definitions of signs of HIV/AIDS, and also mentioned everyday life contacts as a way of transmission of disease. Unawareness of participants about HIV test in Armenia being free of charge could be one of the possible barriers in implementing HIV Voluntary Counseling and Testing (VST) of pregnant women in prenatal care setting.

*Recommendations:* Findings from the study suggest to increase the awareness of HIV/AIDS testing (free of charge) and counselling among pregnant women. Future quantitative study should be undertaken for better assessment of the situation regarding VCT. The study could be helpful in developing of approaches to efficient behavioural change models for HIV/AIDS in Armenia.

## **INTRODUCTION**

### ***Background Information and Literature review***

During the last 10 – 15 years the spread of sexually transmitted diseases (STDs) and the introduction of a new epidemic of Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) have become a threat for the health of many people in Armenia [1]. Infection with HIV is present practically in all countries of the world and an epidemic in many of them. It is known that pregnant women are one of the vulnerable groups for STDs and HIV/AIDS in many countries, including Armenia [2].

In Armenia registration of cases of human immunodeficiency virus infection started in 1988. From 1988 to March, 2005, 317 HIV carriers were registered in the Republic of Armenia, 301 of them were citizens of the Republic of Armenia. The trend towards the increasing number of HIV infection cases has been observed in the country. The number of HIV infection cases registered in the last 4 years in the Republic of Armenia constitutes 50% of all the cases registered in the previous years. The maximum number of HIV carriers was reported in Yerevan: 148 cases (49.2% of all registered cases). The majority of HIV carriers (76.1%) belonged to 20-39 age group. Armenia also has the tendency in the growth of number of HIV infected women. In 2004, 13 cases of HIV-infected women were registered, which is exceptional for the statistics of the country [2], [Table#1].

At the end of 2004, an estimated 39.4 million (35.9-44.3 million) people globally were living with HIV. In many parts of the developing world, the majority of new infections occur in young adults, with young women especially vulnerable. About one-third of those currently living with HIV/AIDS are aged 15-24. Most of them do not know they carry the virus. Many millions more know nothing or too little about HIV to protect themselves against it [2].

Until May 1, 2000 no cases of HIV infection in children were registered in Armenia, but there are registered cases of birth of children from HIV-infected or seropositive mothers and HIV-infected fathers [3].

The transmission of infection disease from mother to baby is called vertical transmission. Table#2 shows the HIV infection transmission modes and the percentage ratio of HIV carriers in Armenia from 1988 to 2005 in Armenia.

Vertical transmission from mother to child is the main mode of acquisition of HIV infection in children. The recent estimates of the risk of vertical transmission are in the range of 15-20% for Europe, 15-30% for the USA and 25-35% for Africa. Transmission can occur in uterus, intrapartum or post-partum e.g. via breastfeeding. Breastfeeding, being a recognized route of transmission, should be discouraged for all HIV positive mothers. About 25% of infected children develop AIDS in the first year of life and about 40% by the age of 4 [4].

More than 70% of all HIV infections are the result of heterosexual transmission and over 90% of infections in children result from mother-to-child transmission. Almost 600,000 children are infected by mother-to-child transmission of HIV annually, over 1,600 each day. Adverse pregnancy outcomes that have been reported in HIV positive women include increased rates of spontaneous early abortion, low birth weight babies, and stillbirths, preterm labor, and preterm rupture of membranes, other sexually transmitted diseases, bacterial pneumonia, urinary tract infections and other infectious complications [5].

Voluntary HIV Counselling and Testing (VCT) of pregnant women is recommended and offered in many countries. Wherever possible, voluntary counselling and testing should be available to pregnant women who request it and offered to all in areas of moderate or high prevalence. Routine testing of pregnant women without consent or without access to counselling is, however, an unacceptable practice and the disadvantages may negate any benefit obtained from knowing the HIV

status of the women. These include a reluctance to utilize maternity services through fear of discrimination, denial of positive diagnosis and stigmatization. There are, however, a number of potential benefits to women of voluntary HIV testing prior to or during pregnancy [5].

There was a commonly held view that routine testing would cause less anxiety because it would eliminate the stigma of saying yes to testing. A move towards the HIV test being recommended to pregnant women as opposed to merely offered is likely to be acceptable, would probably increase uptake rates and should therefore be assessed [6].

Perceived high personal susceptibility to HIV/AIDS, barriers related to confidentiality and partner involvement, self-efficacy regarding alternative feeding methods and religion were all shown to be associated with willingness to accept VCT. The women's acceptance of VCT seems to depend upon their perceiving that VCT and alternative feeding strategies provide clear benefits, primarily for the child. If pregnant women are to fully participate in and benefit from mother-to-child-transmission prevention efforts, their partners must be committed and involved in the process [7].

Almost all the women (96.1%) were willing to undergo HIV testing in pregnancy particularly if it would assist preventing transmission of HIV to their babies; but only few would undergo the test if the result would be shared with relatives. Innovative information and education techniques need to be developed to provide HIV positive mothers with knowledge and skills that can enable them to make informed choices about infant feeding options and other forms of care [8].

Barriers to implementation included lack of provider training, limited staff time, physician resistance, unavailability or avoidance to seek perinatal care by high-risk women, cost, absence of a statewide and hospital-specific plan, lack of reproductive choice focus in post-test counseling, lack of provider knowledge about the administration of ZDV or its availability during labor, and lack of consumer education on perinatal risk reduction. CONCLUSIONS: MCH sites and their providers need

assistance to overcome many barriers they face in implementing universal HIV education, counseling, and testing of women of reproductive age [9].

HIV testing among pregnant women to ensure prevention of mother to child transmission of HIV is a complex issue. Women consider various factors before making decisions. Programme planners and implementing agencies need to be aware of these issues and work together with women and other stakeholders in order to overcome such limitations [10].

### ***Rationale for the Research and Research Questions***

The motivation for research is that during the last 10-15 years the incidence of Sexually Transmitted Diseases (STDs) has increased among pregnant women in Armenia. In addition, the new epidemic of HIV/AIDS has become a public health problem for Armenia in recent 10-15 years. According to the “HIV Surveillance in the Republic of Armenia” by National Center for AIDS Prevention, (2000-2002), p. 130: “The majority of the HIV carriers (81.5%) belong to the age group of 20-39. Until May 1, 2000, no cases of HIV infection in children had been registered in RA (Republic of Armenia), but there are registered cases of children born from HIV-infected or seropositive mothers and HIV-infected fathers”. Pregnant women are one of the vulnerable groups for HIV/AIDS. One of the main priorities of National Health Policy is fighting against HIV/AIDS in Armenia. The Ministry of Health passed a new law in 2004 regarding to free and voluntary HIV/AIDS testing of reproductive age and pregnant women.

The aim of the study is explore the knowledge and attitude of pregnant women regarding HIV/AIDS testing in rural (Kotayk region) and urban (Yerevan) areas of Armenia in order to reveal the possible barriers in implementing testing.

The research questions of this study are the following:

- a. To reveal the knowledge level of pregnant women regarding HIV/AIDS testing in

- Kotayk region and in Yerevan, Armenia.
- b. To explore the attitude of pregnant women towards HIV/AIDS testing in Kotayk region and in Yerevan, Armenia,

## **METHODS AND MATERIALS**

### ***Study design***

An exploratory qualitative study was chosen as the research design. Qualitative research is helpful for exploring issues regarding people's attitude and beliefs towards a specific topic or phenomenon. It allows researcher to go deep inside the problem, and reach the "roots" of the problem. Qualitative research technique, semi-structured in-depth interview was used for data collection. The study instrument, an interview guide is presented in Appendix 5.

### ***Study population***

Study population was pregnant women who were registered in health care facilities for prenatal care in Kotayk region (marz) and in Yerevan, Armenia. The inclusion criteria were: pregnant women who were registered in women's consultations of polyclinics or maternities of mentioned regions, who were willing to participate and were not familiar with the researcher. Exclusion criteria were reproductive age women who were not pregnant and pregnant women who were not registered in women's consultations for prenatal care. The selection of health care facilities was purposive due to geographic location and feasibility. Overall, 8 health care facilities (Women's Consultation Departments for prenatal care of maternities and Polyclinics) were chosen: 4 in rural area: Kotayk region (marz) and 4 in an urban area: Yerevan. In Kotayk region the Women's Consultation Departments of the following health care facilities were chosen: "Hrazdan Maternity" in the town of Hrazdan, "Abovyan Maternity" in the town of Abovyan, Obstetrical/Gynecological Department of

“Nairi Hospital” in the town of Yeghvard, and “Nor Hajn Polyclinic” in the town of Nor Hajn. In Yerevan the Women’s Consultation Departments of the following health care facilities were chosen: “Kanaker-Zeytun Medical Center”, “The Perinatology, Obstetrics and Gynecology Center”, “ArmaMed” (satellite clinic of “Erebouni Medical Center”) and “The Research Center of Maternal and Child Health Protection”.

### ***Sampling and Study Setting***

Overall, 38 potential participants (pregnant women) were approached from June to August 2005. Six pregnant women refused to participate in the study: 2 in Kotayk region and 4 in Yerevan. The response rate was 88% and 80% respectively. A sample each from 32 pregnant women, who were registered in Women’s Consultation Departments for prenatal care were recruited: 16 from Kotayk region and 16 from Yerevan.

Semi-structured in-depth face to face interviews were conducted by a researcher with study participants in separate rooms in the above mentioned health care facilities. The approximate duration of each in-depth interview was 35-40 min. All interviews were conducted in Armenian, and then translated into English. The study time frame is presented in Appendix 3.

### ***Data collection Instrument***

An in-depth ethnographic interview guide was developed. After the pilot (pretest) interviews, the interview guide was revised. All participants were informed about the purpose of the study, and oral consent was obtained before each interview. The in-depth interview field guide [Appendices#2, 3] contains close-ended and open-ended questions. The first part of the interviewer guide includes ethnographic questions regarding age, residency, education, some behavioral habits, and medical history. Questions in the second-part referred to the knowledge and attitude of participants regarding the study topic. The main domains were

focused on knowledge about signs, symptoms, transmission modes of Sexually Transmitted Diseases (STDs) and HIV/AIDS, and the attitude of pregnant women towards Voluntary Counseling and Testing (VCT) on HIV/AIDS.

### ***Data Analysis***

Data was translated from Armenian to English (into word-processing format), coded, entered and preliminary analyzed simultaneously to the data collection process (field notes of each day were entered at the end of the same day). During the data coding process three levels of response-forms were grouped: similar words, phrases and ideas. Quantitative analysis was done to describe the distribution of ethnographic data of study population. Second part of in-depth interview guide refers to main 7 domains regarding participant's knowledge and attitude towards HIV and VCT: knowledge on signs, transmission modes and treatment of Sexually Transmitted Diseases (STDs), facts about HIV/AIDS transmission modes of HIV/AIDS, source from where participants had heard/known about HIV/AIDS, attitude regarding HIV/AIDS testing, issues of trust regarding health care facilities in terms of confidentiality and readiness to undergo voluntary HIV testing. Data analysis was done by hand.

### ***Human subject and ethical considerations***

The research protocol was reviewed and approved by the Institutional Review Board (IRB) committee within the College of Health Sciences of the American University of Armenia [Appendix#5].

Risk/Benefit: There was no risk for study participants. As from the demographic data, interviewees can not be identified, only the research team members will have access to this data. No videotaping was used during the interviews. Only written notes were kept. The

discomfort for participants was their time spent on the interview and the sensitivity issue of some questions. There were no financial or other benefits for participants of the study.

**Disclosure/Consent Process:** The oral consent form was developed in Armenian according to appropriate format and comprehensible language (8th grade level) for interviewees. The English version of the oral consent is presented in Appendix#1.

**Confidentiality Assurances:** The data collection process was anonymous and confidential; participants' names were not mentioned in the notes. All collected data were coded. Only the research team members have had access to the data. The telephone numbers of the person in charge were presented in the consent.

## **RESULTS**

Demographic characteristics of the study participants are the following: respondents were 16 pregnant women age 18-37 (mean age was 25.6 year) from Kotayk region and 16 pregnant women age 19-30 (mean age was 23.6 year) from Yerevan. In Kotayk region 7 (44%) out of 16, and In Yerevan 1 (6%) out of 16 were resided in villages. 5 (31.25%) respondents in Kotayk region and 10 (62.5%) respondents in Yerevan had high school (university) education. The majority (75%) of participants were housewives. The mean number of previous pregnancies was 3.3 and 1.7 respectively in Kotayk group and in Yerevan group.

The results of the in-depth interviews were presented with regard to the main domains of research questions: 1) Knowledge on signs, transmission modes and treatment of Sexually Transmitted Diseases (STDs), 2) Facts about HIV/AIDS, 3) Transmission modes of HIV/AIDS, 4) Source from where participants had heard/known about HIV/AIDS, 5)

Attitude regarding HIV/AIDS testing, 6) Issues of trust regarding health care facilities in terms of confidentiality 7) readiness to undergo voluntary HIV testing.

**1) Knowledge on signs, transmission modes and treatment of Sexually Transmitted Diseases (STDs).** The majority of participants mentioned discharge from genital organs, itching and pain as common symptoms for STDs.

*“If someone has that kind of disease she will have yellow vaginal discharge, pain, itching and probably bleeding from uterus”. Participant 3[P3]*

*“The signs are: pain, itching, discharge, general weakness and fever”. Participant 17[P 17]*

*“Discharge is common for STDs and “dryness” of genital organs, itching, pain among men, and discharge with a specific bad smell”. [P24]*

Almost all respondents mentioned sexual contacts as a main transmission mode for STDs, while approximately half of them mentioned transmission by blood and by everyday life activities. The last incorrect statement was common for participants both with low level and with higher education. Only few respondents, 1(6.25%) out of 16 from each group, mentioned vertical transmission (from pregnant women to fetus) of STDs.

*“These diseases are transmitted from public toilets, by having sexual contacts with unknown people and when having many sexual partners, in hospitals: from not clean (“unwashed”) medical tools (equipment). And also when people do not visit doctors often”. [P4]*

*“The modes of transmission are: sexual contacts, blood, when using the same glass, through contact with clothes”. [P15]*

*“They are transmitted through sexual contact, by sharing the same syringe (drug users). The STDs are transmitted through everyday life contacts”. [P31]*

When asked about treatment of Sexually Transmitted Diseases, 7 (43.75%) in Kotayk group and 11 (68.75) in Yerevan group considered STDs being treatable, and only 2 (12.5%) respondents from each group thought that STDs are not curable.

*“STDs are cured using different drugs, tampons, “washing”, and also by using different plants.” [P4]*

*“If one refers to a doctor immediately it is possible to treat the disease, but if the disease is not treated soon it can have serious complications and bad consequences”. [P9]*

*“I know, there are no treatments for these diseases, they are not curable”. [P10]*

**2) Facts about HIV/AIDS:** Most participants stated that HIV/AIDS is a “very bad, dangerous disease”, 6 (37.5%) in Kotayk group and 11 (68.75%) in said that AIDS is an incurable disease, while 4 (25%) and 1(6.25%) participants reported that AIDS is curable now days. They knew about the drug “Armenicum” as a medication for treatment of AIDS. Regarding signs or symptoms of HIV/AIDS, the respondents described having a weak immune system, skin rash, fever, pain, hair loss, general weakness and lose of body weight.

*“At the beginning there are no signs but later some red rash appears on the skin, then high temperature. Patients with AIDS look like patients with influenza. And every disease affects AIDS patients. AIDS is incurable and people die. As far as I know, people who have AIDS were separated, and they were kept in a special closed and separate place”. [P5]*

*“AIDS is a very bad disease. It is treatable; nowadays “Armenicum” is used for treatment in Armenia”. [P32]*

*“There are a lot of ill people with AIDS in Armenia now. There are a lot of prostitutes in Armenia and therefore AIDS is very widespread nowadays. It is a very bad disease, it is incurable. As far as I know there is a drug against AIDS, but it is not effective, and the disease is incurable now”. [P20]*

*"AIDS is also transmitted by sexual contact. The HIV-carriers are kept separate from society, and contact is prohibited with HIV patients. AIDS is an incurable disease". [P22]*

**3) Transmission modes of HIV/AIDS:** Almost all study participants have mentioned sexual contacts and the majority relying that transmission by blood is the main transmission mode for HIV/AIDS. The other mentioned ways of transmission were: from mother-to child, everyday life activities, and medical equipment. And 3 respondents stated transmission by saliva when talking and through open wound.

*"I know that it is transmitted by sexual contacts, but one feels ashamed to talk about it. It can pass by blood, with the use of same syringe (among drug users). It can pass from mother to child, and every disease is transmitted to child from mother, because the "child get nourishment from the mother" [yerekhan morits a snvum] ". [P1]*

*"It is transmitted through blood when people use the same syringe, needle (drug users), if one has sex with "strangers" ["antsanotneri het"] and with those "not tested". And it is transmitted by blood". [P4]*

*"The ways of transmitting AIDS are the same as those for "sexual infections": mainly by sexual contact, from mother to child. It is not transmitted by blood". [P7]*

*"The transmission modes are the same: through sex, through blood, by saliva when talking, and from contact with infections (wound)". [P23]*

**4) Source from where participants had heard/known about STDs and/or HIV/AIDS:** When asked about the source participants got informed about STDs, almost all said TV, other sources were: magazines, newspapers and from people. Only one respondent said that she heard about AIDS from the radio, and one participant: from a nurse. One participant had learned about AIDS during one of her classes at university.

*"I heard about HIV/AIDS from my sister: she attended medical seminars, and also I read booklets". [P8]*

*"I heard about AIDS from TV, during our lessons and from literature". [P22]*

*"From the Magazine: "Health" ["Aroghjutyun"]" [P29]*

**5) Attitude regarding HIV/AIDS testing:** The issue of HIV testing was discussed with study participants. Only two respondents from Yerevan mentioned vaginal smear test for HIV diagnosis. The vast majority of respondents reported that a blood test was necessary for HIV/AIDS diagnosis. Six women (37.5%) from each group (Kotayk region and Yerevan), considered that all people should undergo HIV testing.

*"AIDS is tested checked by blood test. There is no need to test children. Only adults (men and women) should undergo testing. It would be better that all the people undergo HIV-testing". [P15]*

*"A blood test is required for diagnosis. All people should undergo testing for safety, because the disease has an incubation period". [P22]*

*"Vaginal smear [qsuq] should be done for diagnosis of AIDS, and maybe by a blood test". [P3]*

Whereas, 5 (31.25%) participants thought that it was not necessary to conduct HIV tests for everyone, but only those in “high risk” groups.

*"They take blood from the patient's vein and do an analysis. It is no necessary to check all people for AIDS: if man or woman is sure that he is healthy, there is no need to do the blood test. But if he or she has "abnormal sex life" [voch normal serakan kyanqov e aprum], then the test should be performed". [P7]*

One of the participants reported that HIV-testing should be only voluntarily, and it would be humiliating to undergo obligatory HIV testing.

*"A blood test is performed for AIDS diagnosis. I have undergone obligatory HIV/AIDS testing when I applied for a job in the Ministry of foreign Affairs: I think it was humiliating and it is a violation of human rights to do this test involuntarily. And during that time I was afraid I would get HIV from needles while undergoing HIV testing". [P21]*

**6) Issues of trust on health care facility in terms of keeping confidentiality:**

According to the participants they trust their doctors and their hospitals and polyclinics. 11 (68.75%) of respondents in Kotayk region and 14 (87.5%) respondents in Yerevan said that they trust their health care facility in terms of keeping confidentiality, if the necessity of HIV testing occurs. But these high percentages may be due to the fact that interviews took place in health care facilities, and the answers could have been "more subjective". Some of the respondents, 5 (31.25%) in Kotayk and 2 (12.5%) in Yerevan did not trust Women's Consultation Departments in terms of confidentiality.

*Yes, I trust and respect the physicians and I am a little bit afraid of them. [P2]*

*Yes I trust women's consultation [27]*

*No, because if the test would show that I am ill, I'll be considered dangerous to other people. And I think many people avoid undergoing HIV-testing just for that reason. [P4]*

*No, I would prefer to undergo testing in another place, where people don't know me personally. [P7]*

**7) Willingness to undergo voluntary HIV testing:** Mixed opinions were expressed regarding voluntary counseling and HIV testing: 7 (43.75%) participants from Kotayk region and 4 (25%) participants from Yerevan stated that they would like to undergo HIV testing

voluntarily if the test was free of charge. They were motivated to do the test mainly for checking their health status and to be sure of a positive outcome of their pregnancies. Nine (56.25%) pregnant women in Kotayk group and 11 (68.75%) participants from Yerevan group did not want to undergo HIV testing. They stated that testing is not a necessity: they were sure that they and their husbands were healthy. One (6.25%) participant from Kotayk and 3 (18.75%) participants from Yerevan believed that the HIV/AIDS test is free of charge. Whereas, respectively, 4 (25%) and 8 (50%) participants were sure that they would be charged for the test.

*“Yes, because my health and my partner’s health and life are more important than being embarrassed” [P4]*

*“I think the HIV-testing is not free of charge in Armenia: there is nothing free of charge now. No, I do not want to undergo HIV testing, because I am sure that I do not have this infection”. [P13].*

*“If the doctor suggests doing the HIV test, I’ll agree to do the test: for me and my future child’s safety. I think the test is not free of charge in Armenia”. [P16]*

*“Yes, maybe, I don’t mind doing the HIV test, only if it will be voluntarily. But I trust my husband and I am sure that I am healthy. But I think the test is not free of charge”. [P21]*

*“No because there is no need to undergo HIV testing. But if HIV-testing was obligatory, I would undergo testing”. [P27]*

Unawareness of participants about the HIV test being free of charge could be one of the possible barriers for undergoing HIV Voluntary Counseling and Testing (VST) of pregnant women in prenatal care setting.

Study results show that study participants were aware of signs and symptoms of sexually transmitted infections, but were not clear on their definitions of transmission modes of STDs. The majority of pregnant women, who participated in this study, said that they do not want to undergo voluntary HIV testing and many of them thought that HIV test is not free of charge. The findings of this study could be helpful for exploring the possible barriers for implementation of VCT in primary care setting in Armenia, and suggest appropriate approaches to overcome these barriers.

## **DISCUSSION**

The purpose of this qualitative study was to explore the knowledge and attitude of pregnant women regarding HIV/AIDS testing in rural (Kotayk region) and urban (Yerevan) areas of Armenia in order to reveal the possible barriers regarding undergoing Voluntary Counseling and Testing (VST) on HIV/AIDS. During the last decade the incidence of Sexually Transmitted Diseases (STDs) in Armenia has increased, among pregnant women as well. In addition, the new epidemic of HIV/AIDS has become a public health problem for Armenia in the recent 10-15 years [1].

This research can help to fill the gap in understanding the issues regarding attitude of pregnant women towards VCT in Kotayk region (marz) and in Yerevan, Armenia. This was a public health problem now, because pregnant women are one of the vulnerable groups for HIV/AIDS. This is critical now, because one of the priorities for the National Health Policy is fighting against HIV/AIDS in Armenia. The Ministry of Health passed a new law in 2004 regarding free and voluntary HIV/AIDS testing of reproductive age and pregnant women [2].

The data obtained from this study showed that pregnant women were aware of the

signs of sexually transmitted diseases, but they were misinformed about everyday life contacts as a means of transmission mode for STDs. Study participants considered HIV/AIDS as a very “bad disease”, but were not clear in their definitions of the symptoms, and also mentioned everyday life contacts as a way of transmission of disease. Some also believed that AIDS was a treatable disease.

Findings from this study reveal some aspects of the attitude of pregnant women towards Voluntary Counseling and Testing (VCT) on HIV/AIDS. Some of the respondents believe that only people in high risk groups (prostitutes, drug users) should undergo HIV testing. Whereas, other participants stated that every person should undergo HIV/AIDS testing.

Regarding the issue of awareness of participants about playability of HIV test in Armenia and willingness to voluntary be tested, different opinions were explored. More participants thought they would be charged for, than participants who thought that HIV testing was free of charge. Unawareness of participants about the HIV test being free could be one of the possible barriers to implement the HIV Voluntary Counseling and Testing (VST) of pregnant women in prenatal care setting.

The other possible barriers can be psychological and fear of death from AIDS or fear of being stigmatized if the test result is positive. This can explain the opinion of one of the participants that she would undergo HIV testing only if it was obligatory. Confidentiality related issues also could be considered as a possible barrier factor in utilization of VCT of pregnant women.

There were mixed opinions in literature from other countries regarding voluntary HIV counseling and testing (VCT). Some authors suggested implementing VCT of HIV/AIDS and making it available for any pregnant woman who requests it, and considered unacceptable

routine testing pregnant women without their consent [5]. While other authors stated that routine testing would cause less anxiety, because it would eliminate the stigma of saying yes to testing [6].

To suggest an appropriate behavioral change model, which is an important attribute of HIV/AIDS prevention effort, one should take into consideration individual needs, social and cultural relationships, environmental and economic processes of the particular country.

Either implicitly or explicitly nearly all prevention interventions are theory based. Most rely on the assumption that giving correct information about transmission and prevention will lead to behavior change. Yet research has proven that education alone is not sufficient to induce behavioral change among most individuals. Therefore recent interventions were developed based on individual psychosocial and cognitive approaches that educate individuals in practical skills to reduce their risk for HIV infection [11].

According to WHO classification, human behavior theories-based models were grouped in two levels: 1) individual level (health belief model, theory of reasoned action, social cognitive and social learning theories, stages of change and AIDS risk reduction model) and 2) social and community level (diffusion of innovation, social influences, social network theory, theory of gender and power, empowerment, socioeconomic and environmental factors and social ecological model for health promotion) [11].

***Social Ecological Model for Health Promotion*** could be one of the most efficient and effective models to implement in Armenia. Behavioral determinants for this model are: a) intra-personal, such as knowledge, attitude, and perception of risk, b) social, organizational, cultural, such as social networks, and c) political factors (regulation). And activities will be directed to increase knowledge, development of skills, which could contribute to the development of risk perception. Community based activities and advocacy

would be helpful for implementation of this model.

HIV/AIDS testing of pregnant women is a complex issue. And program planners and health care providers should consider all above mentioned factors while implementing Voluntary HIV Counseling and Testing of pregnant women.

### ***Limitations***

Limitations of the study relate to the limitations of qualitative research in general: data analysis was done by one researcher; the subjectivity of obtained data, purposive sampling, and the study results can not be generalized for other populations. Another limitation was the study setting: interviews conducted in unnatural environment for participants (in health care facilities) can influence interview results.

### ***Recommendations***

An appropriate behavioral change model is an important component for the development of the effective and efficient HIV prevention program. The following recommendations are made based on the study results:

- To design and conduct a quantitative study for better assessment of the situation regarding Voluntary Counseling and Testing (VCT) in Armenia.
- To conduct a study among physicians (OB/GYN) to reveal the barriers that may prevent pregnant women undergoing HIV/AIDS testing.
- To increase the awareness of HIV/AIDS testing (free of charge) and counseling among pregnant women in Armenia.
- To implement social ecological model for health promotion in order to overcome barriers for implementation of VCT.

*A professional publication* of this study will be designed and possibly be published in following medical journals:

- JAMA,
- British Medical Journal
- The American Journal of Obstetrics and Gynecology

## TABLES

**Table#1: HIV infection, registered AIDS cases and death cases in Armenia, 1988-2005**

(Source: HIV/AIDS Epidemic in the Republic of Armenia, distributed by the National Center for AIDS Prevention)

Year of registration	HIV			AIDS			Number of registered deaths		
	total	male	female	total	male	female	total	male	female
<1995	3	3	-	3	3	-	2	2	-
1996	27	19	8	7	7	-	3	3	-
1997	37	30	7	2	2	-	1	1	-
1998	9	5	4	2	1	1	3	3	-
1999	35	26	9	8	6	2	1	1	-
2000	29	23	6	3	2	1	5	4	1
2001	29	26	3	4	4	-	4	3	1
2002	41	33	8	1	1	-	9	8	1
2003	29	23	6	13	12	1	6	5	1
2004	49	36	13	21	17	4	20	17	3
01.03.2005	13	8	5	19	12	7	6	5	1
Total	301	232	69	83	67	16	60	52	8

**Table#2: The percentage of HIV carriers by transmission mode in Armenia, 1988-2005**

(Source: HIV/AIDS Epidemic in the Republic of Armenia, distributed by the National Center for AIDS Prevention)

<b>Transmission through injecting drug usage</b>	<b>53.5 %</b>
<b>Transmission through heterosexual practices</b>	<b>37.8 %</b>
<b>Mother-to-child transmission</b>	<b>1.7 %</b>
<b>Transmission through blood</b>	<b>0.7 %</b>
<b>Transmission through homosexual practices</b>	<b>0.7 %</b>
<b>Unknown</b>	<b>5.6 %</b>

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## **APPENDIX#1: CONSENT FORM (Oral)**

Title: Qualitative study to explore the knowledge and attitude of pregnant women  
Regarding HIV/AIDS testing in Kotayk region and in Yerevan, Armenia

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### Explanation of Research Project:

Good morning/day.  
I am Henrik Khachatrian, MPH student of American University of Armenia. I am conducting a study and you are invited to participate in it. The purpose of the study is to explore the knowledge and attitude of pregnant women towards HIV/AIDS testing. The members of research group are the representatives of American University of Armenia, Collage of Health Sciences. You were selected because you are pregnant and you have registered in Women's Consultation Department for prenatal care.

During this research you will be asked to answer to the questions regarding your knowledge and attitude towards HIV/AIDS testing. The duration of interview will be approximately 40 minutes. It will not affect you physically and will not influence on your prenatal check-ups and/or treatment. You will not have any financial or other benefits for participation in this study. The information obtained during the study will keep confidential. The information will be coded and will be ammoniums. Only study group members will have access to this information, and no one will use your name and this information for other reasons except for this particular study.

The participation in this research is voluntary. You can refuse to participate now or in any time you want during the study. Whether or not you are in the study will not affect your prenatal check-ups and/or your job. If you will have any questions in the future connecting with the study you are free to contact to Michael Thompson, tel: (3741) 512592 or Yelena Amirkhanyan by telephone number (3741) 512568. The person in charge of the study will answer to your questions. Thank you in advance!

If you agree to be in this study, please sign your name below.

---

Subject's signature

NOT VALID WITHOUT THE COMMITTEE  
OF IRB STAMP OF CERTIFICATION

---

Signature of Investigator

---

Date

## **APPENDIX#2: IN-DEPTH INTERVIEW GUIDE**

1. How old are you (in years)?
2. What is your family status?
3. Where do you live (residence)
  - a.  Yerevan
  - b.  other town
  - c.  village
4. What is your highest level of completed education?
  - a.  primary school
  - b.  secondary school
  - c.  high school
  - d.  other (specify) \_\_\_\_\_
5. Where do you work?
  - a.  not working (housewife)
  - b.  working(specify) \_\_\_\_\_
6. Have you been diagnosed with STD during resent 3 years?
  - a.  yes
  - b.  no
7. Do/did you have experience in illicit drug use?
  - a.  yes
  - b.  no
8. Did you have more than one sexual partner during last year?
  - a.  yes
  - b.  no
9. What is your husband's occupation?
  - a.  not working
  - b.  working in Armenia
  - c.  working (or have worked in the past) outside of Armenia
10. At what age did you begin your sexual life?
  - a.  less than 18
  - b.  19-24
  - c.  25-34
  - d.  35 and older
11. What are your total numbers of pregnancies? (If answer was 1, skip Q#12)

12. What were the outcome(s) of your previous pregnancies?

- a. how many births?
- b. how many miscarriages?
- c. how many abortions?

13. Did you ever undergo treatment or take medicines during pregnancy (connecting with STDs or other problem)?

- a. no
- b. yes (specify) \_\_\_\_\_

14. If the doctor will prescribe you a medicine (drug) during pregnancy, will you avoid taking it?

- a. no
- b. yes (specify why) \_\_\_\_\_

15. What do you know about Sexually Transmitted Diseases (STDs), signs (symptoms), modes of transmission, treatment? [probe]

16. What do you know about HIV/AIDS?

17. What do you know about the ways of transmission of HIV/AIDS?

18. From where did you hear/know about STDs and/or HIV/AIDS?

19. Tell me about HIV/AIDS testing, please.

20. Would you trust to the polyclinic/hospital when undergoing HIV/AIDS testing in terms of confidentiality and anonymity?

21. If HIV/AIDS test will be free, will you undergo HIV/AIDS testing voluntary?

- a. Yes (specify why?)  
\_\_\_\_\_

- b. No (specify why?)  
\_\_\_\_\_

Thank you very much for your time and participation!

## **APPENDIX#3: IN-DEPTH INTERVIEW GUIDE (In Armenian)**

□□□□□□□ -----

1. Ձանի տարեկան եք Դուք (ասացեք Ձեր տարիքը տարիներով)
2. Ինչպիսին է Ձեր ընտանեկան կարգավիճակը
3. Որտեղ եք Դուք ապրում
  - Երևանում
  - այլ քաղաքում
  - գյուղում
4. Ինչ կոթություն ունեք
  - տարրական դպրոց
  - միջնակարգ դպրոց
  - ինստիտուտ
  - այլ (նշեք) -----
5. Որտեղ եք աշխատում
  - տնային տնտեսութիւն
  - աշխատավայրը (նշեք) -----
6. Դուք հիվանդացել եք արդյոք որևէ սեռավարակով վերջին 1 տարվա ընթացքում
  - այո
  - ԱՌ
7. Դուք երբեն օգտագործել եք թմրամիջոց
  - այո
  - ԱՌ
8. Դուք ունեցել եք/ ունեք արդյոք մեկից ավել սեռական զուգընկեր
  - այո
  - ԱՌ
9. Որտեղ է աշատում Ձեր ամուսինը
  - չի աշխատում
  - աշխատում է Հայաստանում
  - աշխատում է / նախկինում աշխատել է արտերկրում
10. Ոք տարիքում եք սկսել սեռական կյանքը
  - 18 տ.-ից փոքր
  - 19-24 տարեկանում
  - 25-34 տարեկանում
  - 35 տ. և ավել

11. Ասացեք խնդրեմ Ձեր հղությունների ընդհանուր թիվը/ եթե 1, անցիր հարց 13
12. Ինչով են ավարտվել նախորդ հղությունները
- ծննդաբերություն
  - վիժում
  - արհեստական արորտ
13. Հղության ընթացքում երբևէ դեղորայք ընդունել եք, կապված սեռավարակների կամ այլ պրոֆեսիի հետ
- ոչ
  - այո, մանրամասնեք ինչու -----
14. Եթե բժիշկը Ձեզ դեղ նշանակի հղության ընթացքում, Դուք կխուսափեք արյոյք այն ընդունել
- ոչ
  - այո, մանրամասնեք ինչու -----
15. Դուք ինչ գիտեք սեռավարակների մասին / նշանների, փոխանցման ուղիների, բուժման վերաբերյալ
16. Խնդրեմ պատմեք ՄԻԱՎ թեստի մասին
17. Ինչ գիտեք Դուք ՄԻԱՎ/ԶԻԱՀ ՎՍ ի փոխանցման ուղիների մասին
18. Որտեղից եք դուք տեղեկացել / գիտեք ՄԻԱՎ/ԶԻԱՀ ՎՍ ի մասին
19. Ինչ գիտեք Դուք ՄԻԱՎ/ԶԻԱՀ ՎՍ ի քննության / ախտորոշման մասին
20. Դուք կվստահեք պոլիկլինիկային կամ բուժ. հաստատությանը եթե հանձնեիք ՄԻԱՎ ի թեսք, գաղտնիության առումով
- այո
  - ոչ, մանրամասնեք ինչու -----
21. Եթե ՄԻԱՎ/ԶԻԱՀ-ի ստուգումը / թեսքը լիներ անվճար, Դուք կամավոր կստուգվեիք արյոյք
- այո, մանրամասնեք ինչու -----
  - ոչ, մանրամասնեք ինչու -----

Շնորհակալություն Ձեր մասնակցության համար

#### **APPENDIX#4: TIMEFRAME**

<b>Activities</b>	<b>Dates</b>				
	April, May-05	June-05	July-05	August-05	September-05
Consultations with experts in qualitative research studies					
Hiring a personnel					
Purchasing of supplies and materials					
Getting the approval from IRB					
Preparing of copies of study instruments, materials					
Training of interviewers					
Conducting interviews and observations					
Data interpretation, sorting, coding, entering					
Data analysis					
Report preparation					

## APPENDIX#5: IRB APPROVAL



A DECADE OF ACHIEVEMENT - ԱԿԱԴԵՄԻԱՆԻ ՏԵՍԱԿԱՆ  
AMERICAN UNIVERSITY OF ARMENIA - 2001  
ՀԱՅԱՍՏԱՆԻ ԱՊԵՐԵԿՑԱՆ ՀԱՄԱԼՍԱՐԱՆ  
*College of Health Sciences*

23 May 2005.

Khachatryan Henrik  
Graduate Student, Master Public Health Program  
40 Marshall Bagramian  
Yerevan 375019 Armenia

### RE: IRB Application Form

Dear Dr. Khachatryan:

A departmental Institutional Review Board (IRB) committee within the College of Health Sciences, chaired by AUA Committee on Human Research member Dr.B. Grace Sullivan, reviewed your proposal entitled, "Qualitative study to explore the knowledge and attitude of pregnant women regarding HIV/AIDS testing in Kotayk region and in Yerevan, Armenia". The proposal was approved: Your study is appropriate for an MPH thesis project.

It is our determination that this application does not need to be reviewed by the University's IRB and approval is given to you by the College of Health Sciences to proceed with your project.

This approval does not supersede the continued advice and interactions among you and your faculty advisors. Should any change occur within the proposal, please promptly keep us informed.

Sincerely,

A handwritten signature in black ink, appearing to read "Y. Amirkhanyan".

Yelena Amirkhanyan, MD, MPH  
Teaching Associate  
Secretary, College of Health Sciences Student IRB

cc: Marine Stepanyan, MD,  
IRB Project Coordinator, AUA Committee on Human Research

Student's Thesis File

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