Unites Nations Population Fund

Ministry of Health of the Republic of Armenia
National Statistical Service of the Republic of Armenia

Institute of Perinatology,
Obstetrics and Gynecology

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CLINICAL AND EPIDEMIOLOGICAL SURVEY ON ETIOLOGY, PREVALENCE OF INFERTILE MARRIAGES

Yerevan, 2009

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Head of working group

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CONTENT

PART 1
INTRODUCTION

According to results of research conducted in recent years (Khachikyan M.A., 1998), the infertility rate in the Republic of Armenia is rather high – 32%, which exceeds same indicator of the USA, Western Europe, Russian Federation and other countries of the region several times, exceeds twice the critical level (15%) set by World Health Organization (1993); the critical level indicates, that infertility became the major factor affecting demography of the given country and grew from social and medical problem into a national problem.

Birth rate has droped significantly due to intensification of migration, alteration of reproductive behavior, difficult social economic conditions, as well as increasing rates of abortions and infertility, which in its turn resulted not only in obstruction of the process of simple reproduction but became a serious threat to national security.

Taking into consideration deteriorating demographic conditions in the country and aiming at improvement of the reproductive health situation, the Government of the Republic of Armenia in 2003 approved “Mother and Child Health Improvement strategy for 2002-2015”, in 2007 – “Tha National Action Plan on Improvement of Reproductive Health for 2007-2015”. In that document the problem of infertility has been adopted to be one of the most important issues of the country and an objective to update it had been put. Most important part of mentioned documents is devoted to diagnostication, prevention, adoption, improvement and realization of helthcare mechanisms for unfecund marriages. Besides, an objective had been put to increase the level of medical assistance and develop a strategy of managing unfecund marriages pointing out the mechanisms of implementation.

Hence, policy of addressing the problem of infertility answers the purposes of recent reforms, which have taken place in the healthcare of the Republic of Armenia during recent years and is aiming at meeting reproductive healthcare needs of population of the Republic of Armenia and at increasing of birth rate.

In order to provide diagnosis and treatment of infertility and to address the issue properly it is important to research the prevalence and etiology of

the latter, as well as to collect and analyse information related to knowledge, family structure and reproductive behavior of men and women involved in the survey.

The right of population for reproductive healthcare services, particularly in case of infertility, is not fully provided due to high prices, difficulty of access and unefficiency of treatment.

Clarification of terms

For analysis and interpretation of results of the given research definitions of reproductive health, sexual health and fertility, infertility were used as set by the World Health Organisation (WHO) for common use all around the world.

Reproductive Health

We have also used the definition provided by World Health Organization for term “health”, health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". Reproductive health is interlinked with functions and operations of reporductive system during all stages of life.

Sexual Health assumes physical, mental, and social well-beingin sexual relationships, which is described not only by absence of desease, dysfunction or weaknes, but by living secure and happy sexual life. It is based upon attitude towards sexual relationships, which is free from compulsion, violence or discrimination (World Health Organization, 2002).

Primary Infertility – absence of pregnancy during 2 years of marriage under condition of regular sexual life without use of contraceptives.

Secondary Infertility is defined as absence of pregnancy during 2 following years of marriage with regular sexual life under condition of previous pregnancies and bithr of children.

Primary Subfertility absence of pregnancy during 1-2 years of regular sexual life

Artificial interruption of pregnancy (induced abortion) is interruption of pregnancy before 22nd week of pregnancy period.

Family Planning is avoiding unwanted pregnancy by means of modern contraception.

Fertile sperm is – number of spermatozoon is more than 20 millions, the motility – above 50%.

2. PREAMBLE

2.1 Introduction of country - Armenia

The Republic of Armenia is a mountainous country, which is situated in the north-east of the Armenian Highland, Between the Caucasus and Asia Minor: In the North Armenia neighbors Georgia, in the East – Azerbaijan, in the West – Turkey and in the South – Azerbaijan, Iran and Turkey. Republic of Armenia occupies 28.900 square kilometers and is divided into 11 administrative districts; Yerevan, the capital of the Republic of Armenia, is one of them.

The Republic of Armenia has declared its independence in September of 1991 and thus became the first of the republics of former Soviet Union, which constitutionally. According to classification of the World Bank (World Development Report 1998), the Republic of Armenia is classified as a country, which belongs to the category of “developing countries in transition period with low, medium income”.

Currently Armenia is passing a difficult period of development: The transition process affects not only the sphere of economics, but social spheres as well, generating multiple difficult problems, which the population of the Republic of Armenia has been facing ever since the country gained its independence. Political problems, blockade initiated by Azerbaijan and Turkey, the devastating earthquake of 1988 and conflict around Nagorno-Karabakh made political and social situation in the country even more complicated. The latter resulted in deterioration of the state of health of entire population of the country, as well as in corruption of healthcare system.

Despite all the problems mentioned above and difficulties of the transition period the Republic of Armenia has undertaken the course of stable national strategy and strives to implement social reforms.

According to results of the first National Census (2001), the population of the Republic of Armenia is 3.2 millions, 51.7% of which are women. 67% of the population live in cities (urban population), with almost half of it living in Yerevan, the capital. The population of the Republic of Armenia is ethnically

homogeneous: over 96% of it are Armenians, 1.8% - Kurds, 1.2% - Russians and 1.0% - other nationals. State language is Armenian with its own unique alphabet. Majority of population is attending Armenian Apostolic Church. Almost 9 million Armenians live in different parts of the world forming universal and strong Armenian Diaspora.

Demographic Data

During the past 50 years sharp deterioration of birth rate is observed in Armenia (from 40.1 per 1000 inhabitants in 1960 to 17.0 in 1970). No alterations of birth rate were observed during the period from 1970 to 1990. It varied between 24.1/1000 and 21.6/1000.

According to the demographical yearbook of Armenia for 2009, during the past 8 years the birth rate varied between 10.0 per 1000 inhabitants in 2001 and 12.2 per 1000 in 2009. In the ninetieth the fertility rate varied between 2.3 and 2.6, which was considered as a low index compared to developing countries (3.1 and 3.8), but compared same indicator (1.8) in countries with developed industry this index was high. Currently in Armenia there is a trend of gradual decrease of the fertility rate. According to information provided by the Ministry of Healthcare of the Republic of Armenia during last few years it has been at the level of 1.2 - 1.4; however according to the results of Armenian Demographic and Healthcare Research (2005) it leveled at 1.7. Indexes provided by both sources indicate, that the general fertility rate is lower than the level of simple reproduction.

CHAPTER 1
AIMS AND OBJECTIVES OF THE GIVEN SURVEY, SAMPLING

1.1 Materials and methods of the survey

In order to conduct the clinical and epidemiological survey on etiology of prevalence of unfecund marriages within the framework of cooperation between the Ministry of Health of the Republic of Armenia and the United Nations Population Fund an interdepartmental committee and an expert working group, comprised of obstetrician-gynecologist, venereologist, andrologist and demographer, were formed by the order of the Minister of Healthcare of the Republic of Armenia.

Collection and entry of data was implemented by interviewers of National Statistical Service of the Republic of Armenia. Statistical analysis was provided by specialists of the American University of Armenia.

The design of the present survey is as follows:

1. The survey was conducted in all 10 districts of the Republic of Armenia and in Yerevan among women and men of reproductive age. In order to provide representativeness of the survey it has been planned to conduct it among women aged between 20-45 and men aged between 20-60 living in 2320 households.

2. To develop and adapt the questionnaire,

3. To conduct the survey among men and women who agreed to participate in the given survey.

4. Following algorithm of the survey was approved:

4.1 Gynecological examination, mirror screening, bacterioscopic examination of content of neck of uterus and vagina.

4.2 In the scope of screening on sexually transmitted infections it is justified to perform tests on trichomonias, gardnerela, gonorrhoea, micoplasma, cytomegalovirus and Chlamydia.

Inclusion of other sexually transmitted infections was not considered reasonable, as they have no significance in the etiology of infertility.

4.3 Examination of men's genitals.

4.4 Examination of the spermogram.

4.5 Histerosalpingographia.

4.6 Identification of level of prolactin and dehidroepiandrostendion in women's blood.

4.7 Identification of the level of prolactin and testosterone in men's blood.

5. To select and train 15 interviewers for conducting interviews and collection data.

6. To select and train obstetricians-gynecologists, andrologists and sonographiststo conduct examination of married couples by set algorithm.

7. In order to provide affordability of clinical examination and to have maximum involvement of interviewed men and women it has been decided to conduct examinations in medical institutions of primary healthcare as per residence addresses and to equip the latter with necessary medical items and furniture (mobile, foldable gynecological chairs, medical gloves, mirrors, clothes, glass slides, Folkman's spoons, forcepses, fascia, cotton, centrifuge and different environments for examination).

8. Aiming at increasing credibility of the clinical examination, identification of deseases in mucous membrane of uterine neck, uretine itself and in adnexa uteri, as well as complications proceeding from chlamydia and gonorrhoea, it has been decided to conduct ultrasonic examination of pelvis minor organs of interviewed men and women using mobile sonographic machines. With this end in view sonographers were included in the group of obstetrician-gynecoogists.

9. Provision of mobile sonographic machines and work of sonographers shall be free of charge, representing the investment of the Institute of Perinatology, Obstetrics and Gynecology of the Republic of Armenia.

10. To realize examination of hormones and sexually transmitted infections on contractual basis with organizations, which were successfully won the competition (tender).

1.2 Aims of the survey:

- **To collect nationwide data** on fertility, reproductive health, reproductive and sexual behavior of married couples and knowledge related to contraceptives, sexually transmitted infections, including HIV/AIDS.
- To collect data on fecundity, fertility, general and reproductive diseases.
- To receive data on prevailence and etiology of unfecundity, fertility, diseases, frequency of examinations, preferred methods of contraception,

sexually transmitted infections, factors that ensure fecundity and reproductive behavior by means of interview and special examination.

- To collect data on prevalence of sexually transmitted infections and hormonal condition.

1.3 Previous similar surveys.

1989-1990 – an epidemiological survey has been conducted in the city of Yerevan (K.B. Akunts and co-authors) among 4349 married women on prevalence of unfecundity. According to the results of the survey primary infertility comprised 3.2% and secondary infertility – 21.4%.

1997-1998 – the NGO "For health of the family" (M.A. Khachikyan and co-authors) has conducted a nationwide epidemiological survey on prevalence of unfecundity among 1400 men and women of reproductive age, including all regions of the Republic of Armenia and the city of Yerevan. According to the results of this survey, primary infertility among women comprised 3.4%, and secondary infertility – 28.5%. Primary infertility among men comprised 3.3% and secondary infertility – 15.2%.

Analisys of the results of the given survey give an opportunity to get data on variation of indexes of reproductive health of men and women, particularly – indexes of unfecund marriages, in dinamics, thus making it possible to assess existing social programs aimed at the reporductive health of the population of the Republic of Armenia, as well as programs directed to improvement of operation of medical service providers, all that in terms of developing new strategies.

1.4 Specific problems.

Following observations:

- Social and economical profile of the demographic and target group.
- Formation of sexual behavior and family,
- Family planning, abortions, sexually transmitted infections, HIV/AIDS,
- Medical assistance in family planning and artificial miscarriage,
- Sexually transmitted infections had by respondents, sexual and reproductive dysfunctions,
- Factors and pernicious habits affecting reproductive health,
- Factors affecting unfecundity and subfertility.

1.5 Household selection methodology

The sampling was made aiming at collection of data necessary for provision of the most detailed analysis possible. Particularly, for provision of data on fecundity, fertility somatic and reproductive health, as well as for collection of information on sexually transmitted deseases had by respondents, preferred methods of contraception, state of health and level of social security, pathologic (morbid) conditions affecting fertility, previously had deseases, undergone surgerical interference and pernicious habits.

Based upon the collected date men's and women's state of health, knowledge and level of social security were assessed, as well as prevalence of unfecundity, reasons of infertility among men and women, particularly hormonal status and prevalence of sexually transmitted infections.

Sampling was made based upon collection of the abovementioned data in the city of Yerevan and marzes (village, town).

Two-stage sampling methos was used: During the first stage primary sampling units (PSU) of regional nature (clusters) were selected. Each primary sampling unit of regional nature was selected equivalently to the proportion of population size (PPS) by "systematic" selection from the list of populated areas.

The database of addresses and households of 2001, created by the National Statistical Service of the Republic of Amrenia was used as the list of populated areas. Since some of the populated areas included in the sampling were rather large for simple listing, special segmentation process was used for selection of preferred households. Selected large populated areas were divided into segments, two fo which were included in the sampling.

The full listing of households was realized in selected segments and in those populated areas, which were not subjected to segmentation. Lists of registered households served as selective framework at the second stage of sampling of households. Households in each populated area were selected in coordinated manner, in order to provide average filled interview among men and women corresponding to objectives of the survey.

All women aged between 20-45 and men aged between 20-60, who were present at the household selected by the sampling in the night preceeding the interview, were considered as respondents corresponding to objectives of the survey.

The size of sampling was defined at 2320 households, 1618 were accessible, 1091 0f which had individuals aged between 20-45, among which there were 856 women. 144 (16.8%) of 856 interviewed women suffered infertility; 46 (5.37%) of all interviewed women had primary infertility and 98 (11.44%) – secondary infertility.

Individuals aged between 20-60 were present in 1091 households out of 1618, among which there were 941 men. 49 (5.2%) of 941 were sterile, 25 (2.7%) suffered from primary infertility and 13 (2.6%) – from secondary infertility.

1.6 Questionnaires

Two questionnaires, separate for men and women, were used for survey "Clinical and epidemiological survey on etiology of prevalence of unfecund marriages" in Armenia. Each of those questionnaires in their turn consisted of:

- "Household questionnaire" (appendix 1),
- "Individual questionnaire of etiology of unfecund marriage" (appendix 2),

Questions were based upon model instruments of the survey and were elaborated by SPSS programm. Model questionnaires were localized at the Institute of Perinatology, Obstetrics and Gynecology of the Republic of Armenia. Questionnaires were compiled in Armenian language.

Household and individual questionnaires were subjected to field testing in May 2008.

Household questionnaires were directed at collection of information on marital status, esucational level of respondent women and their husbands/ partners, social and economic state, sexual behavior, fertility, abortions, reproductive health, etc., among women and men of reproductive age (aged between 20-45 and 20-60 accordingly) present at selected households.

Household questionnaires consisted of the following major sections:

1. personal infromation of the respondent and of men and women of reproductive age living in the given household,

2. general infromation about respondent's education level, economic situation and sexual behavior,

3. information on respondent's desirable number of children in the family, awareness of family planning and use of contraceptives,

4. awareness of character and ways of trasnmission of veneral infections including HIV/AIDS and sexually transmitted diseases,

5. information on sexual activeness, examinations and treatment related to unfecund marriage.

6. infromation on pathological states, previous deseases, surgical interferences and pernicious habits negatively affecting respondents; reproductive health.

Individual questionnaire includes information of etiology of unfecindity.

The following examinations were performed: Gynecological examination, mirror screening, bacterioscopic examination of content of neck of uterus and vagina.

Results of:

tests on trichomonias, gardnerela, gonorrhoea, micoplasma and Chlamydia,

examination of men's genitals,

examination of the spermogram,

histerosalpingographia,

identification of density of prolactin and dehidroepiandrostendion in women's blood,

results of tests on identification of the level of prolactin and testosterone in men's blood

Field staff

Main field operations started in May 2008 and were completed in September 2009.

Upon compeltion of interview with each sampling unit (cluster) the questionnaire was immediately returned to Yerevan, to the National Statistical Service of the Republic of Armenia for data processing. All questionnaires filled and returned from the field were checked by specialists. The data indicated in the questionnaire was entered in the computer by the data introduction team with use of SPSS statistical data processing program. The process of office checking, input (editing) and processing of the data started simultaneously to the field operation in May 2008 and was completed in September 2009.

Response coefficients

Response coefficients varied between 97.0 and 99 0.97-1

The analysis of the statistical data was performed by use of either Pearson's Chi-square test on independence and by calculation of Spearman correlation coefficient, or one of them.

CHAPTER 2
RESPONDENT CHARACTERISTICS

2.1. Main characteristics of the respondents

Armenia is an ethnically monorace country, all the respondents in the study were armenians.

Approximately 60-65% of population of Armenia live in towns, and 1/3 of the population lives in Yerevan. So 261 women-respondents engaged in the study live in Yerevan, which makes 30.3% of the sampling.

856 married women aged from 20 to 45 years and 941 men aged 20-60 years have been interviewed and examined.

Based on the information received, the knowledge, health condition and social security situation of the reposndents, as well as 5 factors bringing to pregnancy (anatomical and fucntional condition of uterus, ovulation and luthein phase, uterine tube patency, the condition of cervix and mucus plug, sperm condition) was evaluated, also clinical examinations were performed, namely, STD revealing examinations, identification of density of several hormons: prolactin, dehidroepiandrostendion in womens' blood, and identification of testosterone level in men's blood.

2.1.1. Distribution of women an men interviewed/examined by marzes

In order to provide the representativeness the investigation was performed based on the sampling made by the RA National Statistical Service, with the addresses presented by them.

The number of the investigated was decided based on the population of the given marz. Thus, the distribution of the respondents in all 10 marzes and Yerevan has the following scheme (Table 2.1 and Chart 2.1):

Table 2.1

Distribution of the respondents by marzes and Yerevan city

	Marz	Marz code	Number and percent of women examined		Number and percent of men examined	
1	Yerevan	901	262	30.6	309	32.8
2	Aragatsotn	902	46	5.4	52	5.5
3	Ararat	903	57	6.6	58	6.3
4	Armavir	904	68	7.9	75	7.9
5	Gegharkunik	905	55	6.4	61	6.5
6	Lori	906	64	7.6	72	7.7
7	Kotayk	907	79	9.2	75	7.9
8	Shirak	908	70	8.2	73	7.8
9	Syunik	909	61	7.1	64	6.8
10	Vayots Dzor	910	36	4.2	38	4.0
11	Tavush	911	58	6.8	64	6.8
	Total		856	100	941	100

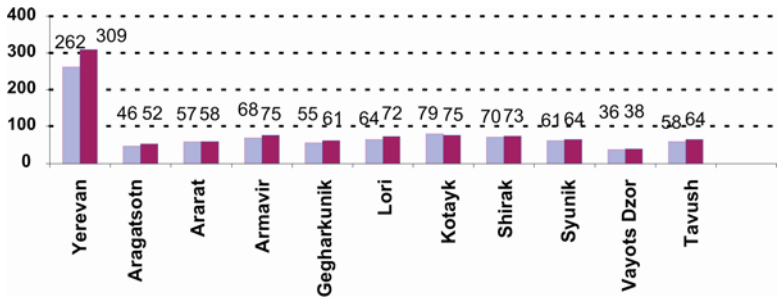


Chart. 2.1. Distribution of the respondents by marzes and Yerevan city

As it can be seen from the data above the percentage of respondent women and men by marzes and Yerevan city are alike.

2.1.2. Number of the respondents by place of living and age groups

343 (40,1%) and 384 (40,8%) of the women and men interviewed were urban, 513 (59,9%) and 557 (59,2%) – rural.

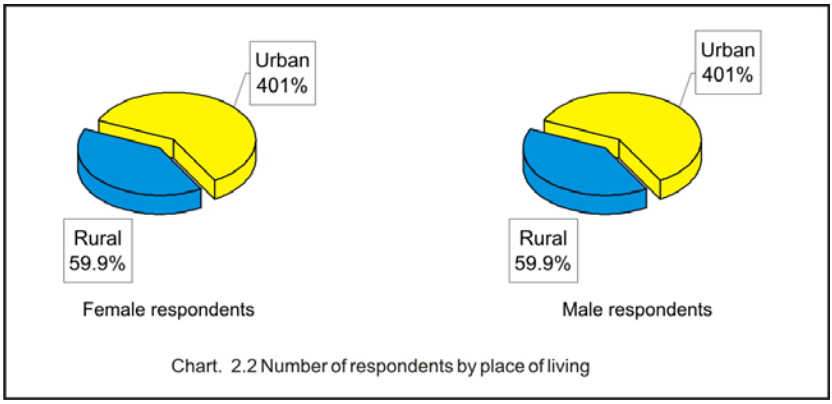


Chart. 2.2 Number of respondents by place of living

2.1.3 Distribution of the respondents by age

According to age the female respondents were divided to 6 groups, and the male respondents - into 8 groups:

Table 2.2

Age of respondent females	Absolute number	Age of respondent males	Absolute number
20-24	112	20-24	156
25-29	256	25-29	268
30-34	204	30-34	198
35-39	198	35-39	160
40-44	75	40-44	87
45	11	45-49	34
		50-54	22
		55-59	16
Total	**856**		**941**

As it can be seen from the information presented the majority of respondent females and males - 66,8% and 66,1% correspondingly, are in active reproductive age (24-34 years old).

The analysis of the presented data (Tables 2.2) show that the number of the respondents for women and men by place of living and by age groups in marzes and in Yerevan city are alike.

2.1.4. Distribution of the respondents by educational background

The survey once again proved the fact that there is no illiteracy among the population (either men or women) in Armenia.

Only 6 women and 8 men had incomplete primary, primary and incomplete general education.

As it can be seen from the Chart. 2.3 the vast majority of men and women (74% & 62% correspondingly) have general secondary and specialized secondary education, and every 3-th respondent had high or incomplete high education.

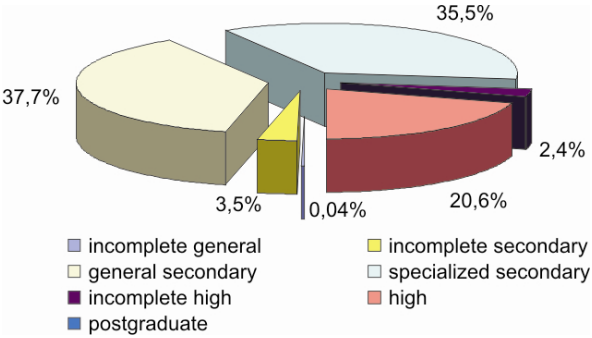


Chart. 2.3 Educational background of the respondent women

Table 2.3

Educational background of the recent husband / partner of the respondent

Educational background of the recent husband / partner of the respondent		abs. number	%
1	illiterate	0	0
2	incomplete primary (1 – 3 grades)	1	0.1
3	primary (4 grades)	1	0.1
4	incomplete general (5 – 7 grades)	1	0.1
5	full general (8 grades)	13	1.4
6	incomplete secondary (9 grades)	19	2.1
7	general secondary (10/11 grades)	401	42.6
8	specialized secondary	187	19.9
9	incomplete higher school	151	16.0

10	higher school	164	17.4
11	postgraduate	3	0.3
	Total	*941*	*100*

2.1.5. Employment and income of the respondents

During the recent 12 months the vast majority of the respondent women (67.5%) didn't have any regular or conditional job (Table 2.4).

The majority of the respondent women and men (approximately 70%) and men (approximately 48%) didn't have any job in 12 months period preceding the interview (Tables 2.4 and 2.5).

Table 2.4

Number of women having regular or conditional job during the recent 12 months

Job done		Abs. number	%
1	Performed work on regular or conditional basis	259	30.3
2	Doesn't perform any work	597	69.7
	Total	*856*	*100*

Table 2.5

Number of men having regular or conditional job during the recent 12 months

Job done		Abs. number	%
1	Performed work on regular or conditional basis	489	51.9
2	Doesn't perform any work	452	48.1
	Total	*941*	*100*

Every second woman (58%) didn't have any income in 12 months period preceding the interview (Chart 2.4).

8.2% of the respondents had up to 10000 drams income, 16.5%- 10000-20000 drams, 14.5%- 20000- 50000 drams, and only 2.8% had income up to 150 000 drams (Chart 2.4).

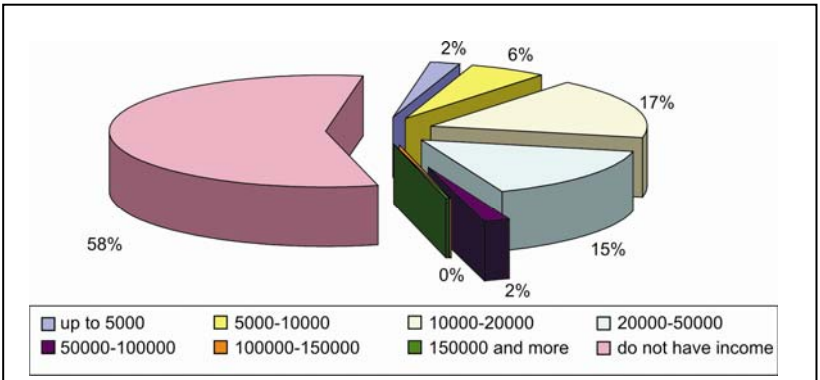


Chart. 2.4. The average income of the respondents (in drams)

Special attention should be paid to the income sources of the women interviewed, their average earnings, as well as the dependence of the earnings from the education (absolute number and percentage), which are presented in the following Table.

Table 2.6

Occupation and Education

Main source of income	Higher		Incomplete higher		Secondary		Incomplete secondary	
	abs. num.	%	abs. num.	%	abs. num.	%	abs. num.	%
Civil servant	52	63.4	9	15.2	3	1.2	2	0.8
Agriculture	8	9.7	12	20.3	108	44.8	105	46.6
Trade	3	3.6	25	42.3	94	39.0	64	28.4
Gets aid	4	4.8	6	101	15	6.2	15	6.6
State sources	15	18.3	7	11.8	21	8.7	39	17.3
Total	82	100	59	100	241	100	225	100
607 women in total								

As it can be seen from the table, there is a certain dependence between occupation and educational background.

The occupation of 63.4% respondents with higher education is the state service, as compared with 0.8% of respondents with incomplete secondary education. There is a diverse regularity in people of agricultural and trade sphere: 9.7 & 3.6% against 46.6% & 28.4. The majority of people having

chance income is among ones with higher educational background (18.3%), which is 2 times higher for the people having incomplete higher and secondary education.

2.1.6. Family status of the respondents

At the moment of interview the vast majority of the respondents was married -737 (86.1%), 54 (6,3%) of them were married but did not lived with their husbands, 32 women (3.7%) were widowed, 19 (2.2%) – divorced, 10 (1,1%) – had never been married, 4 (0,5%) – mentioned other status (Chart 2.5).

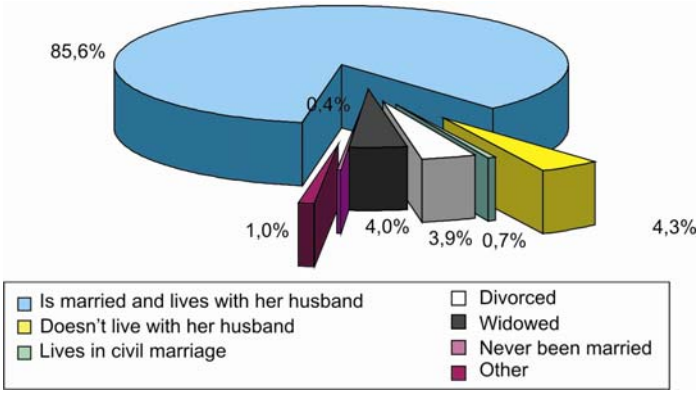


Chart. 2.5 Family status of the respondents

The investigation of the family status of the respondents by age groups (Table 2.7) shows that there is no separate link between age and family status, exclusive of the age groups 20-24 and 44 and more. The highest frequency of the answer "At present the woman is married and lives with her husband" (93%) is registered in the age group 20-29, the number of widowed women is 2 times higher in the age group 44 and more, making 8%.

The study of the number of partners of the women interviewed is of a separate interest. According to our national description the majority of the respondents had one partner during their lifetime (97.9%¤, 2.2% of them had 2 partners, and only 3 women had 3 and more partners (Table 2.7).

Table 2.7

Distribution of the respondents by the number of their partners

	Abs. number	%
one husband (partner)	838	97.9
two partners	16	1.9
three and more partners	2	0.2
Total	**856**	**100**

2.1.7. Sexual behaviour of the respondents

2.1.7.1. Age at the time of the first sexual intercourse and marriage/ cohabitation

854 of the women interviewed (99,7%) told the age when they had sexual intercourse at the first time, 2 women did not give answer. The majority of the respondents were 18-25 years old at the time of the first sexual intercourse (84.4%) (Chart 2.6). Only 9 women started their sexual life at the age before 17 (1,1%), and 124 (14,5%) - in the age group 30 and more. According to our national description in 99% cases the time of the first sexual intercourse coincided with the marriage.

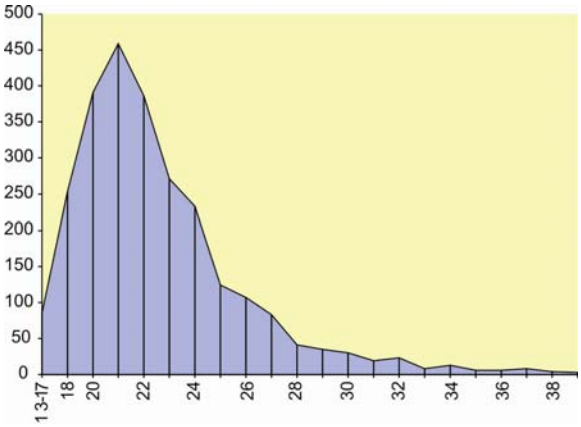


Chart. 2.6 Age at the first sexual intercourse

2.1.7.2. Duration of sexual life

The Table 2.8 presents the duration of marital (sexual) life of the respondents.

82 (9.5%) respondents had a sexual life up to 1 year, 215 (25.1%) - 2-5 years, more than the half of them - 501 (58.5%) 6-10 years and 58(6,8%) 10 years and more.

Table 2.8 Duration of the sexual life

Duration of the sexual life	abs. number	%
up to 1 year	82	9.6
2-5 years	215	25.1
6-10 years	501	58.5
10 years and more	58	6.8
Total	**856**	**100**

2.1.7.3. Study of the frequency and periodicity of sexual life of the respondents within the last 2 years

The data about the frequency of sexual life of the respondents is presented in the Table 2.9

Table 2.9
The frequency of sexual relations among the women interviewed

		abs. number	%
1	Almost every day or every other day	85	9.9
2	At least once a week	365	42.7
3	Not more than 3 times a month	264	30.9
4	Rarely (occasionally and not in every month)	29	3.4
5	There were no sexual relations involved	8	0.9
6	Doesn't want to answer	86	10.0
7	Other	19	2.2
	Total	**834**	**856**

The prevalence of sexual relations 52% is among the women having sex often (every day and at least once a week), every 3rd respondent (30.9%) had sex not more than 3 times a month. Every 10th woman considered the question to be incorrect.

CHAPTER 3
FAMILY PLANNING AND USE OF CONTRACEPTION

3.1. Ever use of contraceptives

All the women were asked if they or their husbands have ever used any method of contraception. The results are presented in the Table 3.1.

Table 3.1

Ever use of contraceptives

	What method of contraception has the respondent used	**abs. number**	**%**
1	Never used any	188	21.9
2	Hormonal pills	42	4.9
3	Injected hormonal preparations (injections)	15	1.7
4	Hypodermic implants	0	0.0
5	Intrauterine contraceptive device	131	15.3
6	Condoms	127	14.8
7	Vaginal diaphragms	0	0
8	Women's condoms	0	0
9	Vaginal spermicidal agents – suppositories, pills or jellies	21	2.5
10	Tying up of the fallopian tubes (Female sterilization)	5	0.6
11	Tying up of the ejaculatory duct (male sterilization)	0	0
12	Abstaining from sex on certain days of the month (rhythmic method)	65	7.6
13	Withdrawal	158	18.5
14	Breastfeeding	35	4.1
15	Vaginal infusions	59	6.9
16	Other	10	1.2
	Total	**856**	**100.0**

Every 5 interviewed woman or her partner (21.9%) had never used any method of con-traception, 78.1 % used contraceptive methods.The most common methods were: IUDs (15.3%), condoms (13%), withdrawal (11.5%), abstaining (10%), hormonal methods (3.9%).

The most frequently used methods were IUD (15.3%), condoms (14.8%), withdrawal (18.5%), abstaining (8%), hormonal pills (4.9%).

As it can be seen from the above mentioned data 34.3% of the respondents used modern methods of contraception, which is higher by 12% that the data provided by the "Armenian demographic and health survey" 2000 and 2005.

3.2. Use of contraception at the time of interview

The use of contraceptives at the moment of the interview is presented in Table 3.2

At the moment of interview 389 (45.4%) respondents used some means to prevent conception, 296 (34,5%) women did not use any means, 28 (3.3%) women did not give a response to the question.

Table 3.2

Use of contraception at the time of interview

		abs. number	%
1.	Use	389	45.4
2.	Use not regularly	143	16.7
3.	Do not use	296	34.3
4.	Did not answer	28	3.3
	Total	856	100

3.2.1. Use of condoms at the time of interview

As far as the condoms are important not only for contraception but also to prevent the transmission of STDs, a separate question was asked regarding the use of condoms. Table 3.3 presents the number of condom users at the time of the interview.

Table 3.3

Use of condoms at the time of interview

		abs. number	%
1	Use regularly	231	26.99
2	Use rarely	94	10.99
3	Do not use	531	62.04
	Total	856	100.0

231 (26,9%) out of 856 pairs regularly use condoms, 94 (10,9%) of them use rarely, the rest 531 respondents do not use condoms.

3.3 Indicators of contraceptives use by other surveys

According to the data provided by the “Armenian demographic and health survey”, 2000, 22.3% of the married women use a method of modern contraception, 39.5% - do not use any method of contraception, 1.1% of them use hormonal pills, 9.4% - use IUD, 6.9% - use condoms. According to the survey carried out in 1998 (M.Khachikyan, R.Abrahamyan) 57% of married women used a method of contraception, 2/3 of which used the method of withdrawal. Another survey on ”National Program on Reproductive Health”, RA Ministry of Health, 1998 also presented that 60% of married women used a method of contraception, half of them used the method of withdrawal.

It is obvious, that there is an improving tendency in the field of using modern methods of contraception.

CHAPTER 4
MAJOR CHARACTERISTICS OF INFERTILITY

4.1 Infertility rate among respondents

Among 856 respondent women 144 (16,8%) have stated infertility in their anamnesis, meaning, that they have never been pregnant during 2 or more years of regular sexual life. 46 respondent women (5,37%) stated primary infertility and 98 (11,44%) - secondary infertility. During the recent 2 years 98 (11.4%) didn't have pregnancy, i.e. they sufferred from secondary infertility.

Among 941 respondent men 49 (5.2%) were steryl, 23 (2.3%) of which suffered primary infertility and 26 (2.8%) - secondary infertility. 144 infertile women and 49 steryl men were separated as a focus group.

4.2 Distribution of unfecund couples by age groups and residence areas.

Distirbution of unfecund couples as per age is presented in table 4.1

Table 4.1

Age of infertile women	Absolute values	%	Age of sterile men	Absolute values	%
20-24	12	8.3%	20-24	5	10.2%
25-29	29	20.2%	25-29	7	14.3%
30-34	32	22.2%	30-34	12	24.5%
35-39	44	30.5%	35-39	8	16.3%
40-44	15	10.5%	40-44	6	12.3%
45	12	8.3%	45-49	5	10.2%
			50-54	4	8.2%
			55-59	2	4.1%
Total	**144**	**100%**		**49**	**100%**

As numbers in the table indicate, 66.1% and 64.4% respondent men and women correspondingly fit in active reproductive age group between 24-34, whereas in case of infertility, age groups of 35 and more were twice more often in general comparison: correspondingly 51.02% and 49.3%.

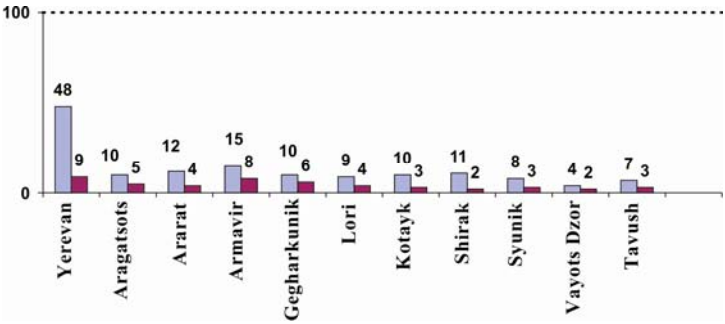


Chart 4.1. Distribution of infertile men and women as per residence areas.

As per the residence areas, the infertility rate among women was high in Yeevan, Armavir, Ararat, Gegharkunik, Shirak and among men sterility rate was particularly high in Yerevan, Armavir and Gegharkunik (Chart 4.1).

4.3 Structure of infertility among men and women

Observing the structure of infertility among men and women as per types of infertility it can be stated, that the rate of primary infertility among women is two times less compared to rate of secondary infertility, whereas these two rates are almost equal among men. This indicates deterioration of reproductive health among women, as they grow older (Chart 4.2.)

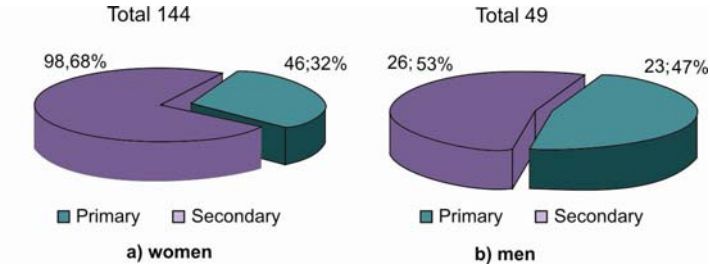


Chart 4.2. Distribution of unfecund married couples as per types of infertility.

4.4 Social and economic status of respondent men and women

4.4.1. Income

40.3% and 62.3% of women suffering from correspondingly primary and secondary had no source of stable income, 37.3% and 31.2% correspondingly has source of permanent income, 4.4% and 6.5% correspondingly has income from time to time (Chart 4.3).

Among men suffering from primary and secondary infertility the situation is as follows: correspondingly 10.5% and 3.9% of men have no source of stable income, 58.2% and 66.2% - have stable income and 25.3% and 28.6% have income from time to time. (Chart 4.4)

Comparison between levels of income among women and men revealed the severe difference between the former; women are 10-15 times less secure then men (Chart 4.5).

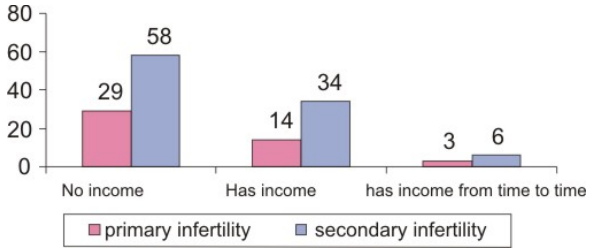


Chart 4.3. Level of income among women suffering from primary and secondary infertility

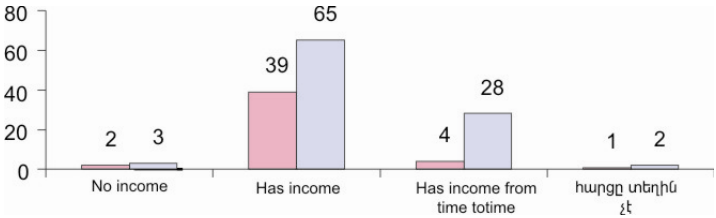


Chart 4.4. Level of income among men suffering from primary and secondary infertility.

No correlational link has been revealed between male and female either primary or secondary infertility and income.

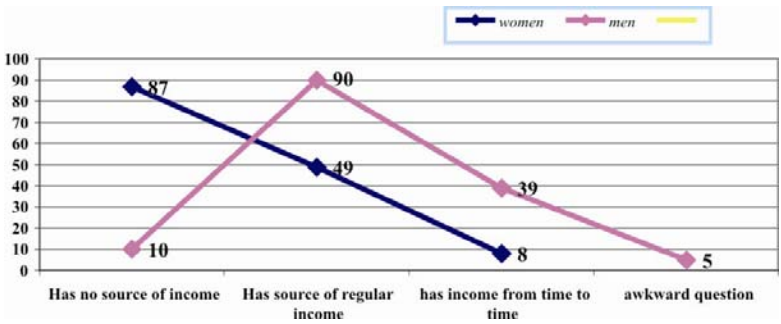


Chart 4.5. Level of income among infertile women and men

The level of income among respondents couples showed, that income of 4.8% makes 10000 AMD, the income of every 9th couple is 20000 AMD, 17.3% gain income at the value of 20000-25000 AMD, 68% gain income at the value of 25000-50000 AMD, 23.6% of respondent couples have income exceeding 50000 AMD (Chart 4.6).

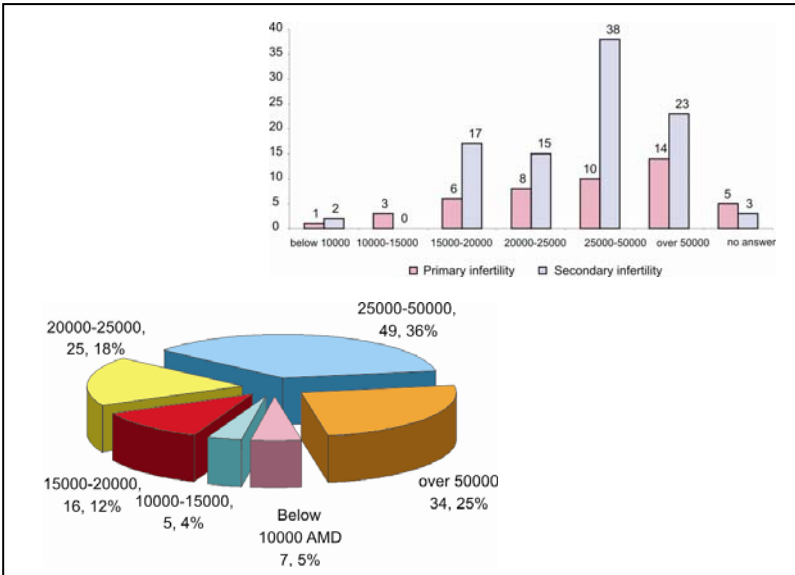


Chart 4.6 Relation of family income level to primary and secondary infertility.

General comparison of level of income among infertile women and men showed that income level of the latter is 1.5 – 2 times higher.

4.4.2. Water supply is one of the conditions, which has significant importance for family healthcare, thus analysis of water supply conditions in place for respondents has been included into the given survey.

51 (53%) of respondents have running cold water on permanent basis, 4 (2.8%) of respondents have both cold and hot running water on permanent basis, (4,2%) have cold running water 2 hrs. per day, 4-6 hrs. per day - (6,9%), 10 hrs. per day - (54,2%), 7 (4.9%) unfecund couples have no running water at all (Chart 4.7).

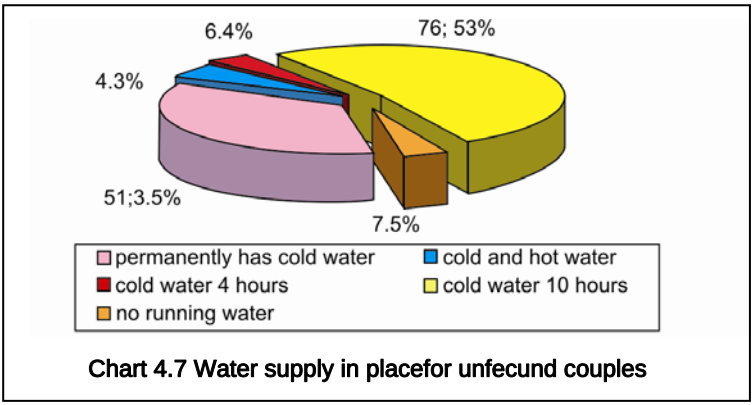


Chart 4.7 Water supply in placefor unfecund couples

Observation of life conditions of families indicated that 11 (7,6%) respondents have good life conditions, 75 (52,1%) – somewhat satisfying life conditions and 40.3% were not satisfied with the life conditions they have (Chart. 4.8a)

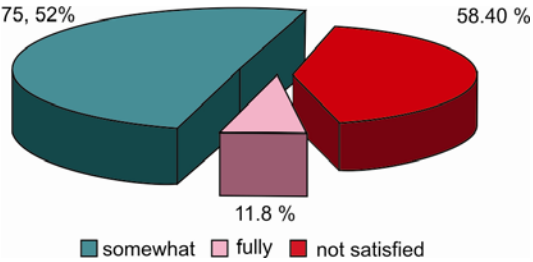


Chart 4.8 Life conditions of respondents

No correlation has been revealed between male and female infertility and income.

4.5 Relation of the marital status and educational level of married couples to primary and secondary infertility.

Observation of marital status of examined couples showed, that 67.4% of respondents were married and resided together, 27.8% were separated (married, but residing separately), 0.7% were in open marriage and 4.2% were divorced (Chart 4.9).

Comparison between the marital status of members of the focus group and that of all respondents revealed that among infertile women the number of those married but living separately is 3 times higher.

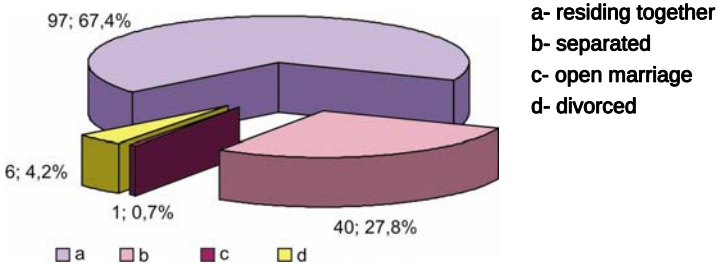
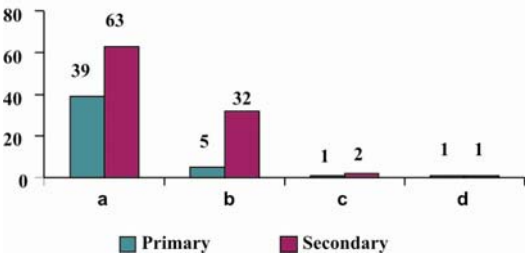


Chart 4.9 Marital status of couples.

Data on marital status has been analyzed also by types of infertility – primary and secondary.

It is worth mentioning, that women suffering secondary infertility live separately from their husbands 4 times more often compared to those suffering primary infertility (44.7% against 12.9%) (Chart 4.10).



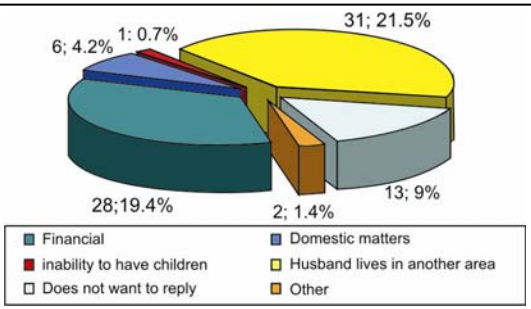
a- residing together b- separated
c- open marriage d- divorced

Chart 4.10 Relation of marital status to primary and secondary infertility.

Women suffering secondary infertility securely live separately more frequently as compared with those suffering primary infertility (P>0.05).

Observation of reasons for separation or divorce.

According to the results of analysis of collected data, the major reason for separation or divorcing the recent husband (partner) is desire of the latter to live and work in another area (21.5%), financial difficulties and domestic matters (23.6 %) (Chart 4.11). Only in one case, the parties stated inability to have children as the reason of separation. It is worth mentioning, that every 11th respondent did not want to state the reason of separation or divorce.

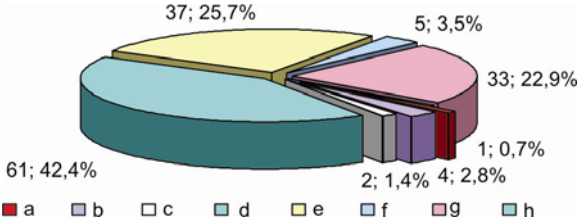


63 women reside together with their husbands

81 are separated or divorced

Chart 4.11. Major reasons for separation of divorce.

Overwhelming majority of respondents (68.1%) has secondary and secondary technical education; every fourth respondent (26.4%) has incomplete university education or a university degree. Only one infertile woman is uneducated (illiterate) and four women have completed 8 years of school (Chart 4.12).



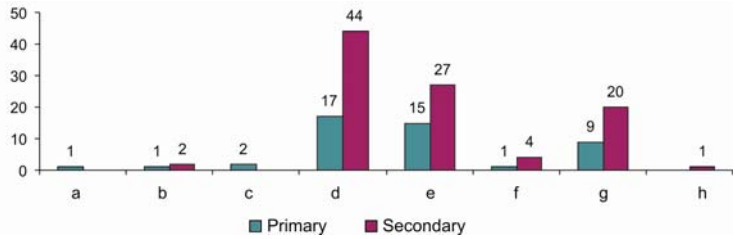
a- illiterate
b- basic general (8 years)
c- incomplete secondary (9 years)
d- general secondary (10/11 years)
e- professional training
f- incomplete secondary
g- tertiary
h- post graduate

Chart 4.12. Education level among unfecund couples.

Comparison of education level of married couples to that of the general group has indicated that educational level of those groups was similar.

No significant differences were detected between the level of education and type of infertility (Chart 4.13).

According to Spirman's coefficient no correlation was revealed between educational level and infertility type.



a- illiterate
b- basic general (8 years)
c- incomplete secondary (9 years)
d- general secondary (10/11 years)
e- professional training
f- incomplete secondary
g- tertiary
h- post graduate

Chart 4.13. Relation of educational level to primary and secondary infertility.

4.6 Specifics of sexual life of married couples.

Observation of sexual partners of married couples revealed, that majority of respondents (97.2%) have only one sexual partner; only one respondent has 2 partners and 3 respondents had no sexual partner at the moment of interview (Chart 4.14).

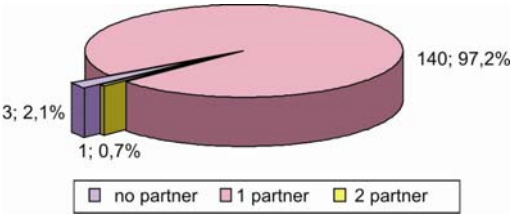


Chart 4.14. Number of sexual partners.

Analysis of data on **first sexual intercourse and marriage age** revealed, that women suffering primary (37, 80.4%) and secondary (83, 84.7%) infertility had first sexual intercourse at the age of 18-30 (Chart 4.15).

Early, before the age of 17, sexual relations were registered in 5 (10.9%) cases among women suffering primary infertility. Same indicator is slightly

lower among women with secondary infertility (13, 13.2%), thus early start of sexual life with only one partner is not a risk factor for origination of primary infertility.

Special attention has been given to research of first sexual intercourse and marital age, which have fully coincided.

According to Spirman's coefficient no correlation was revealed between first sexual intercourse age and infertility.

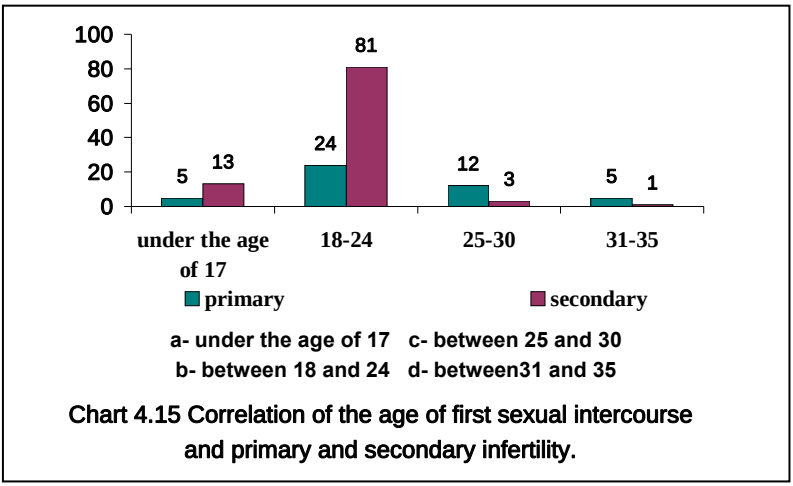


Chart 4.15 Correlation of the age of first sexual intercourse and primary and secondary infertility.

Observation of **duration of marriage** is subject of particular interest.

According to definition of WHO, the marriage is considered unfecund, if no pregnancy occurs during 2 years of marriage under condition of regular sexual life without contraception.

Distribution of respondents by duration of unfecund marriage is presented in Chart 4. 16.

24 (16.7%) of respondents who had unfecund marriage stated, that their recent marriage/common residence lasted for 2 years, and 21 of those suffered primary infertility and only 3 – secondary infertility. Every fifth respondent (30, 20.8%) suffered infertility for 2-5 years.

As it can be seen from presented data in majority of cases (90, 62.5%) period of infertility lasted over 5 years, varying between 5 and 23 years.

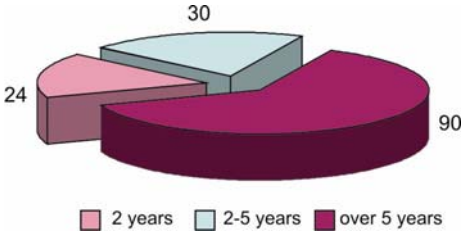


Chart 4.15 Duration of marirage

Duration of unfecund marriage for 5 and more years was stated by 90 (62.5%) women, which is by 7% higher among women suffering secondary infertility (46.5% and 53.5% correspondingly).

It is important to mention, that less that 5 years of marriage prevails among those suffering primary infertility (19, 41.3%) (Chart 4.17), whereas among those suffering secondary infertility prevails duration of marriage at 5 years and more (74, 75.5%). Only one respondent had previous marriage, which lasted over 5 years.

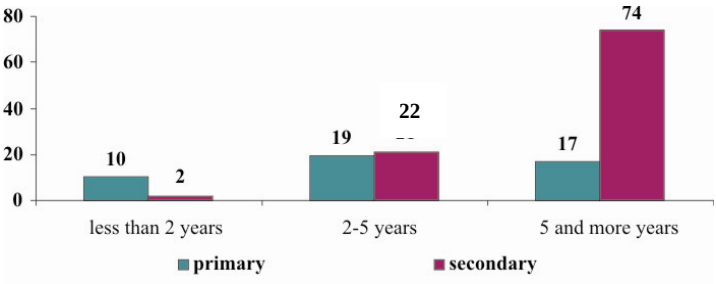


Chart 4.17. Correlation of duration of marriage/common residence to primary and secondary infertility.

4.7 Sexual activity of respondents.

Frequency of regular sexual intercourses is one of the major factors necessary for occurrence of pregnancy. Overwhelming majority of respondents, 123 (85.4%), have stated having satisfying frequency of sexual intercourses; 65 respondents had sexual intercourse once every day or every other day, 58 – at least once a week. Special attention must be paid to the

fact, that 4 respondents hadn't have sexual intercourse, thus infertility was conditioned by sexual dysfunction (possibly – virgogamia) (Chart 4.18).

Observation of sexual activity by types of infertility revealed, that in case of primary infertility prevails sexual intercourses are daily or every other day, and in case of secondary infertility – more rare, at least once a week. More rare sexual intercourses feature mostly secondary infertility (table 4.2).

Table 4.2

Unprotected sexual activity of recent years

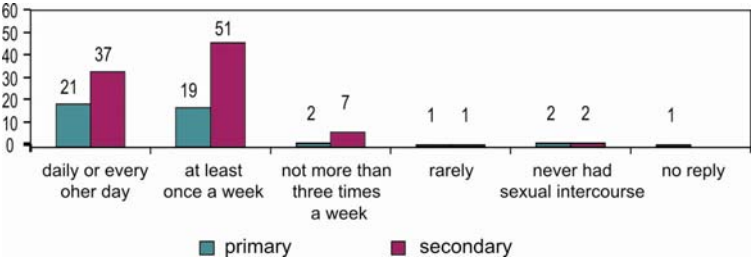
N	Frequency	Primary infertility		Secondary infertility	
		Absolute values	%	Absolute value	%
1	Daily or every other day	28	60.9	42	42.9
2	Once a week	7	15.2	29	29.6
3	Not more than 3 times a month	3	6.4	16	16.3
4	Rarely	2	4.4	8	8.2
5	No sexual intercourse	4	8.7	0	0
6	Do not remember, do not want to answer	1	2.2	2	2.1
7	Other	1	2.2	1	1.0
	Total	**46**	**100**	**98**	**100**

Note

Sexual relations are considered regular if occur at least once a week.

Interrupted sexual intercourse, washing out and natural methods are also considered as contraceptive measures.

Total period of both present and past marriages/common residence must be considered.



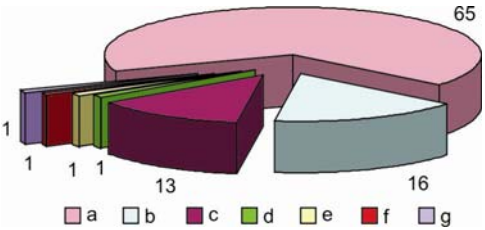
a- daily or every other day
b- at least once a week
c- not more than 3 times a month
d- rarely (accidentally and not every month)
e- never had sexual intercourse
f- no reply

Chart 4.18. Correlation of frequency of sexual relationships and primary/secondary infertility.

4.8 Role of artificial miscarriage (abortion) in etiology of secondary infertility.

Artificial miscarriage (abortion) has certain role in etiology of secondary infertility.

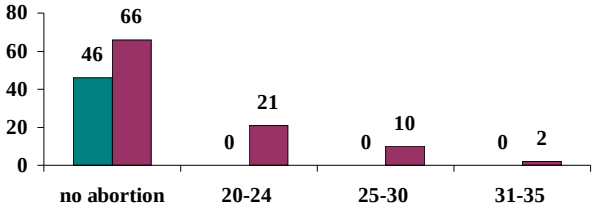
Almost all women suffering primary infertility have denied having induced miscarriage in their anamnesis, whereas every third woman suffering secondary infertility (33, 33.6%) had had artificial miscarriages; 16 (48.4%) stated having had 1 abortion, 13 (39.4%) – 2 and more, 3 women – 3 and more, 1 respondent refused to answer (Chart 4.19):



a- No abortion
b- 1 abortion
c- 2 abortion
d- 3 abortion
e- 4 abortion
f – 5 abortion
g – does not remember/ refuses to reply

Chart 4.19 Correlation of secondary infertility with number of artificial miscarriages.

Abortions were registered in anamnesis of 33 women suffering secondary infertility. Twenty one (36,4%) of them had abortions in active reproduction age (20-24), 10 women – at the age of 25-30, 2 women – at the age of 31-35 (Chart 4.20):



a- No abortion
b- at the age of 20-24
c- at the age of 25-30
d- at the age of 31-35

Chart 4.20 Correlation between the period of pregnancy when the first artificial miscarriage (abortion) was induced and primary/ secondary infertility.

It is important to mention, that in 28 cases (84.8%) artificial miscarriages were induced before the 12th week of pregnancy and only in 5 (15.2%) cases it was induced in the second phase, during 13-22 weeks of pregnancy (Chart 4.21):

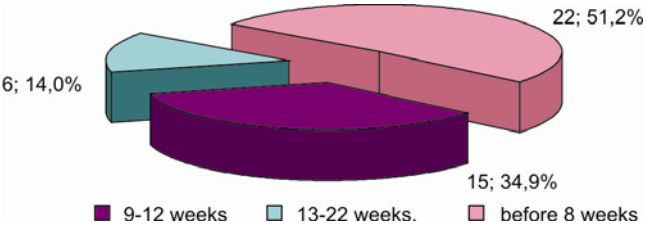


Chart 4.21. Distribution of abortions between pregnancy periods.

Hense, According to Spirman's coefficient a direct correlation was revealed between artificial abortion secondary infertility.

4.8.1 Frequency of abortion complications in cases of infertility.

It is known, that abortion, especially one with complications may lead to secondary infertility.

Observation of correlation between abortion complications and secondary infertility revealed, that out of 33 women who had abortions 4 (12.1%) stated having complications: bleeding and fever (Chart 4.22).

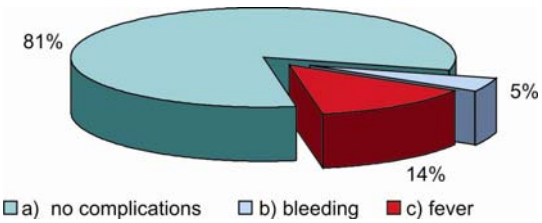


Chart 4.22. Complications of artificial miscarriage among women suffering secondary infertility.

Despite only 4 women stated obvious complications, it is known, that abortions are often followed by dysfunctions of endometrium, glands and receptor system and provoke early miscarriage, which is often not diagnosed as such.

Distribution of abortions as per first birth giving.

According to analysis of obstetric-gynecological anamnesis 33 women (22.9%) had only one abortion in their anamnesis and only in one case of all abortion had been performed before the first birth giving. In other 32 cases women had abortions after first birth giving, 18 women – after first birth giving, 10 women – after second birth giving, 3 women – after third birth giving, 1 woman did not remember (Chart 4.23).

According to Spirman's coefficient a direct correlation was revealed between artificial abortion performed after first pregnancy and secondary infertility.

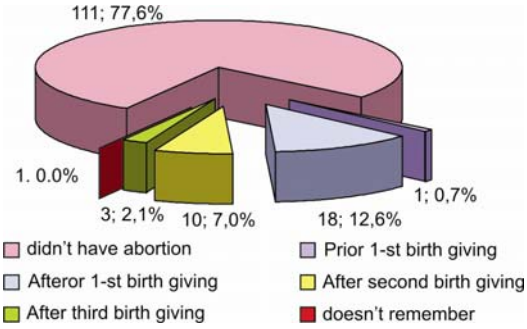


Chart 4.23 Distribution of abortions as per first birth giving.

Reasons for first abortion

111 (77.01%) married coupled never had abortion. For 16 (11.1%) the main reason for the first abortion was the decision to have children later, 8 (5.6%) women had therapeutic abortions (health problems of the mother and intrauterine growth retardation of the fetus). 3 women (2.1%) already had as many children as they have planned, 6 (4.2%) had unsatisfactory living conditions and decided to interrupt pregnancy (Chart 4.24).

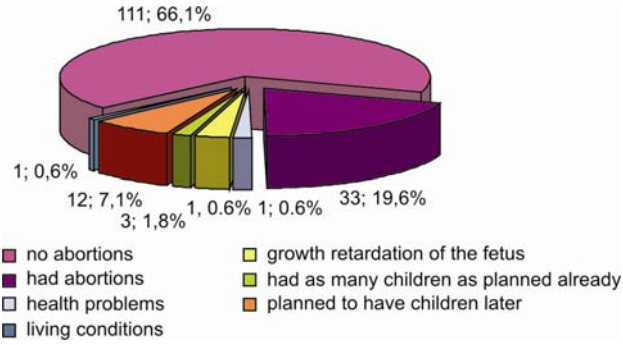


Chart 4.24. Reasons for first abortion

The person making the decision for performing abortion, choosing the place and the specialist

The decision of performing abortion was mainly agreed with husband / partner 24 (72,7%). In 4 (12,1%) cases the woman had made the decision

by herself, in 5 (15. 2 %) cases the decision was made by the doctor's recommendation based on the condition of woman or fetus (Chart 4.25).

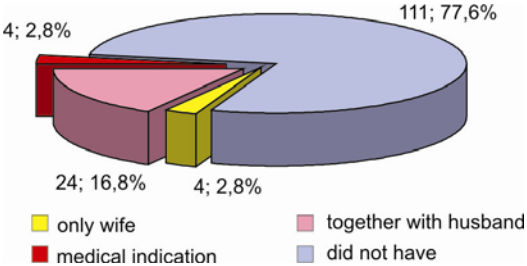


Chart 4. 25. The person making decision of performing abortion

The abortion was mainly performed in maternity hospitals or specialized centers, only in 1 case out of 33 the abortion had been performed in ambulatory, and in 3 cases - in polyclinics (Chart 4.26).

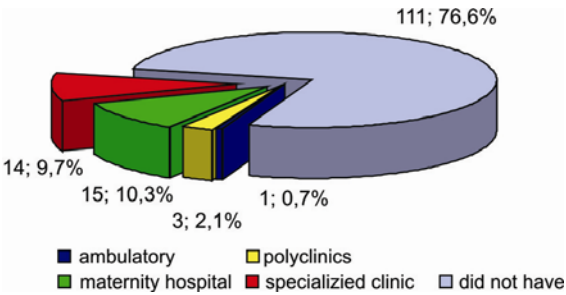


Chart. 4.26. The place where the first abortion was

In all the 33 cases the abortion was performed by an obstetrician-gynecologist. 4 women had abortion complications: bleeding, fever and pain syndrome (Chart 4.27).

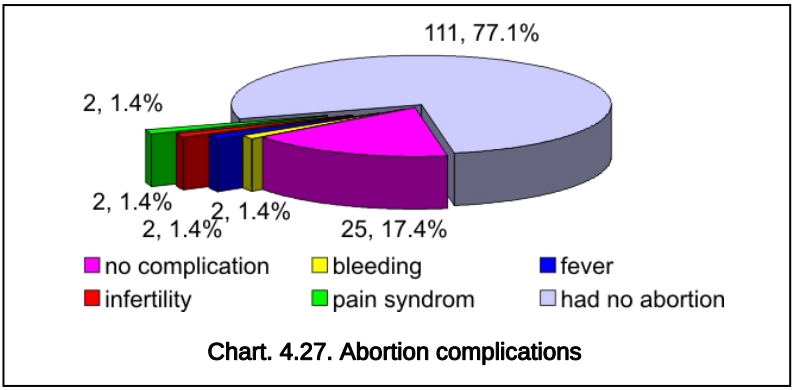


Chart. 4.27. Abortion complications

The examination of the husband/partner attitude towards abortion showed that in the majority of cases husbands were agree with the decision of their wives, and only in 2 cases husband /partner was against or was not informed. In 1 case the husband / partner showed indifference. With the aim of identification of the impact of the abortion on reproductive health of the patient, the availability of deliveries after abortions was studied in the anamnesis. 22 (66,7%) of women out of 33 had pregnancies afterwards.

Every third woman having abortion didn't have pregnancy afterwards, which means that there is a direct correlation between artificial abortion and secondary infertility.

Did woman use contraception during that period?

111(77%) married couples did not use any contraception. Among 33 pregnant women 19 (57.8%) did not use contraception, 14 (42.2%) used contraception unsuccessfully. Most of all, in 8 cases, interrupted sexual intercourse was used as contraceptive, condoms and intrauterine contraceptives were used in three cases each (Chart 4.28).

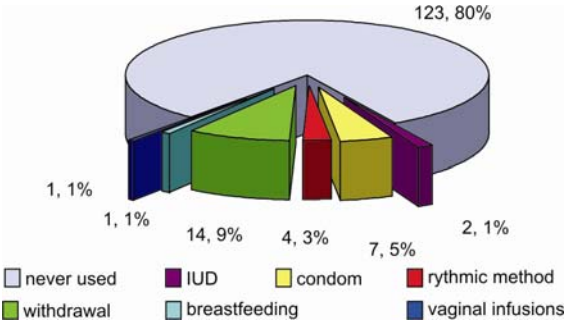


Chart.4.28 Use of contraception at the moment of interview

4.8.2 Spontaneous miscarriages among unfecund couples.

Every 8th woman suffering secondary infertility (11.2%) had spontaneous miscarriages at different phases of pregnancy in her anamnesis, and all of them had undergone curettage of uterine cavity; only one woman reported complications (Chart 4.29). Hense, there is a direct correlation between spontaneous abortion and secondary infertility.

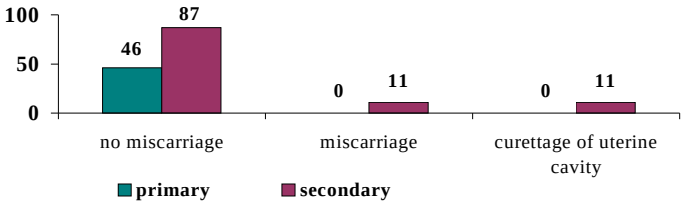


Chart 4.29 Correlation between spontaneous miscarriages and primary/secondary infertility.

4.9 Planned composition of family at the moment of marriage.

It is interesting, that every 5th married couple planned to have a big family (3 and more children) at the beginning of their married life, 2 children – 56 couples (38.9%) and only 1 child – 5 couples (3.5%).

51 married couples did not plan for an exact number of children and let is to circumstances, particularly to the will of God – every third couple (27.8%), only 3.5% connected it to social conditions (Chart 4. 30).

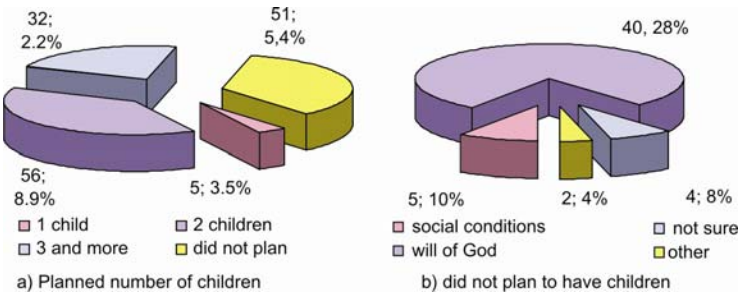


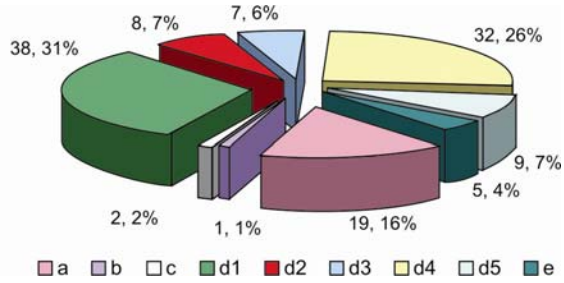
Chart 4.30. Planned family structure

4.10 Further plans to have children

In cases of secondary infertility every 4th couple had no further intentions to have children, and 28.5% of couples planned to have 2 more children.

Every 10th couple had no further plans to have children because they already have satisfying number of children, only 2 (2.0%) couples refused to have children because of being too young or too old (Chart 4.31).

Every 7th married couple (14 couples, 14.3%) refused to have children because of social and economic factors.



a. No, both of us do not want to have children,
b. No, I do not want to have children (any more),
husband wants to have children (one more child)
c. Yes, my husband and I would like to have
d1. One child
d2. Two children but my
d3. Three children
d4. Four children
d5. Five children
e. other response

Chart 4.31 Further plans to have children

4.11 Obstetric-gynecological anamnesis of married couples.

Several women were pregnant at the moment of the interview; for 6 out of 9 the pregnancy was planned and desired, one would like to get pregnant but not at that moment, 2 were not yet certain how they felt about their pregnancy.

4.12 The level of knowledge on STDs among respondents.

During the process of studying the etiology of infertility, essential importance should be paid to the evaluation of knowledge on STD transmission and clinical signs of STDs, which will assure the data of previously suffered and treated diseases in the anamnesis.

Each respondent was asked to state if the following infections are considered to be STDs and about the ways of transmission (Table 4.3).

The majority of women having infertility problems were not only unaware about the correct ways of STD transmission; they even didn't have information about most of the STDs (Chart 4.32).

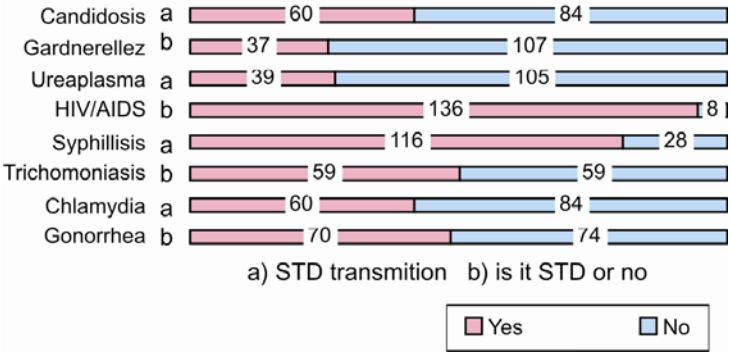


Chart. 4.32 . Women's knowledge on STDs

The knowledge of infertile women regarding the STD infections in cases of unprotected sexual intercourse is presented in the following Chart.

Table 4.3
Knowledge about STDs

		sexually transmitted		not transmitted sexually	
		abs. number	%	abs. number	%
1	gonorrhea	104	72.2	40	27.8
2	tuberculosis	12	8.3	132	91.6
3	toxoplasmosis	7	4.6	134	93.0
4	Chlamydia	40	27.7	104	72.2
5	genital warts	16	11.1	128	88.9
6	scab	9	6.5	135	93.5
7	syphilis	138	95.8	6	4.2
8	HIV/AIDS	132	91.6	12	8.4
9	mycoplasma	39	27.1	105	72.9
10	herpes	18	12.5	126	87.5
11	trichomoniasis	46	31.9	98	68.1
12	influenza	17	5.2	127	94.8
13	salmonellosis, dysentery	7	4.8	137	95.2
14	hepatitis	5	6.6	139	93.4
15	pubis pediculosis	4	2.8	140	97.2

The interviewed women are well informed about HIV/AIDS and syphillis, and gonorrhea, these diseases were marked as STDs in correspondingly 95.8, 91.4% & 72.2%. The respondents had insufficient knowledge about chlamydia (27.7%), genital warts (11.1%), scab (6.5%), herpes (12.5%). 4.6 & 5.2% of women correspondingly consider that tuberculosis and influenza are STDs.

The knowledge of women regarding the STDs mentioned is presented in Table 4.4.

Table 4.4

Knowledge about transmission of STDs

	Way of STD transmission	yes, possible		impossible		in some cases		doesn't know	
		abs. number	%	abs. number	%	abs. number	%	abs. number	%
1	during blood transfusion	125	86.8	10	6.9	5	3.5	4	2.8
total answers 144									
2	In public bath-houses	70	50	28	20	31	22.1	11	7.8
total answers 140									
3	When kissing	75	52.4	23	16.1	22	15.4	23	16.1
total answers 143									
4	Through sexual intercourse	109	76.7	32	22.5	16	11.3	19	13.4
total answers 142									
5	When shaking hands	35	25	57	40.7	16	11.4	22	15.7
total answers 140									
6	When being injected with an already used syringe	130	93.5	51	36.7	14	10.1	15	10.8
total answers 139									
7	Through a sting of a mosquitoes	68	47.9	49	34.5	15	10.6	12	8.5
total answers 142									
8	When using the household objects of a person diseased with chlamydiosis	62	43.9	64	45.4	8	5.7	7	4.9
total answers 141									
9	When getting treatment from a physician or dentist	75	52.8	48	33.8	9	6.3	10	7.04
total answers 142									
10	Through transmission from mother to fetus	108	77.7	20	14.4	10	7.2	11	7.9
total answers 139									

According to the data received during the interviews 86.8% percent of the respondents have sufficient knowledge about transmission of STDs through during blood transfusion, when being injected with an already used syringe (93.5%), through sexual intercourse (76.7%), through transmission from mother to fetus (77.8).

The respondents had very scanty knowledge about possible transmission of STDs through a sting of a mosquito (47.9%), in public bathhouses (48.6%), when shaking hands (25%).

4.13 STDs the respondents previously suffered.

During the recent years a tendency to increase of sexually transmitted diseases is seen in Armenia and in the whole world. Most of those diseases have decisive importance for the causes and pathology rise of the reproductive illnesses. The results of the study (Table 4.5) showed that every 4-th respondent had a STD in the anamnesis. Approximately 14.5 % of the respondents didn't deny but didn't also confirm the fact of having a STD.

Table 4.5

The study of infertile women previously suffered STDs

N		Number of women	%
1	Previously had STDs	35	24.3
2	Previously didn't have STDs	88	61.1
3	Don't know	21	14.6
		144	**100**

Attention should be paid to the fact that (Table 4.6) in comparison to respondents living in villages the prevalence of STDs among the respondents living in towns was 2 times higher.

Table 4.6

The study of previously suffered STDs by town/village

N	Town/village	Number of women	Women having STD	%
1	In town	53	19	35.8
2	In villages	91	16	17.5
3	Total	144		

4.14 Bad habits of married couples

According to the data presented in different pieces of literature such dangerous habits as smoking, alcohol and drugs addiction have their negative impact on reproductive health, and mainly on fertility.

The analysis of the data received as a result of present study showed that a very small number of examined women, including those who suffer from infertility had bad habits. At the same time the results of the study among men are unfavorable. Every 2nd examined man smoked, meanwhile 38%of them smoked 20 cigarettes a day and more.

According to Spirman's coefficient a direct correlation was revealed between male sterility and smoking (20 and more cigarettes).

4 of women out of married couples having primary or secondary infertility mentioned about using alcohol and another 3- of using drugs.

As for the partners, the women mentioned using alcohol or drugs in correspondingly 18 and 5 cases, which in 16 and 4 cases had occasional character (Chart 4.33-4.34).

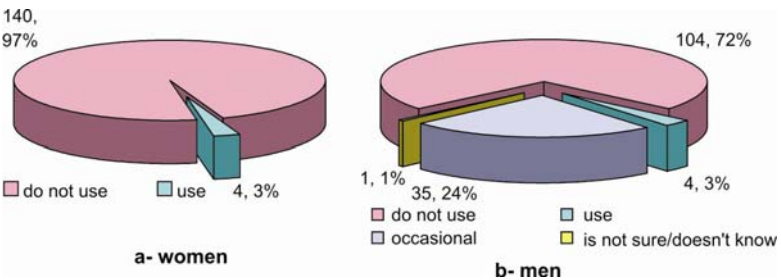


Chart. 4.33 Use of alcohol among women and men

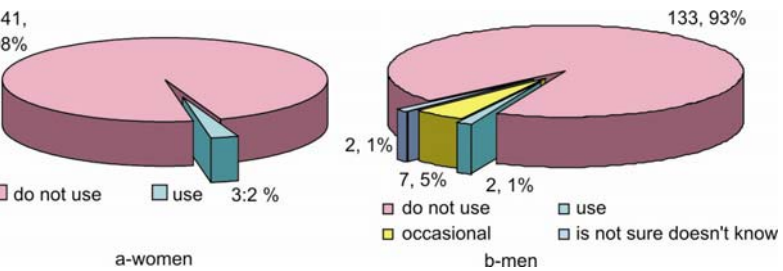


Chart. 4.34 Use of drugs among women and men

2 respondent women having primary and secondary infertility in each group mentioned use of tobacco, meanwhile every third man was mentioned to use tobacco - 73 (50,7%) in total (Chart 4.35).

Thus, sterile men definitely smoke more frequently as compared to women (P>0.05).

Smoking women used in average 5±1.2 cigarettes, the men - 22±3.4 cigarettes.

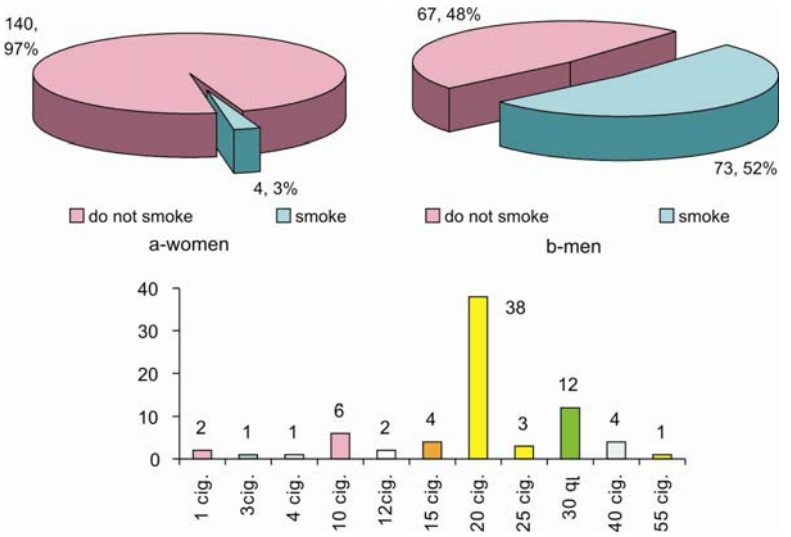


Chart.4.35. Use of tobacco among women and men

4.15 Reproductive plans of respondents in the past and at present

10 respondents tried to get pregnant in the past, but had no success. At the moment of interview every second respondent having infertility had desire to get pregnant 65 (45.1%).

42 (29.2%) respondents tried to get pregnant during 1 to 9 years.

The study of infertility reasons showed that at the end of examination the doctor came to a conclusion that 1 (0.7%) woman was unfecund, in 2 (1.4%) cases the reason was the absence of sexual activity.

111(77.1%) women didn't have abortion, 1 (0.7%) woman performed abortion before the first delivery, 15(10.4%) performed abortion after first de-

livery, 12 (8.3%) women - after second delivery, 5(3.4%) women - after third and more deliveries.

31 women have ever used a method of contraception to prevent pregnancy (Chart 4.36).

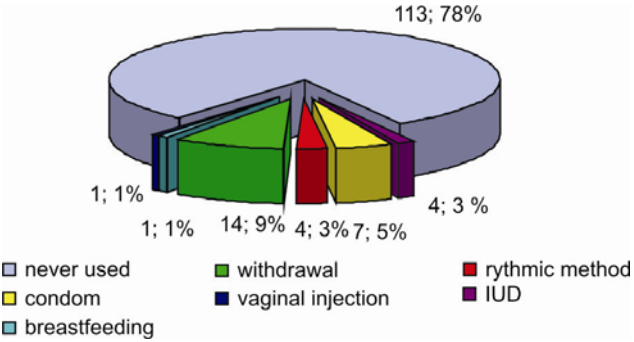


Chart. 4.36. Ever used contraceptive methods by wife or husband

The Chart 4.37 presents the reasons of stopping the use of modern methods of contraception.

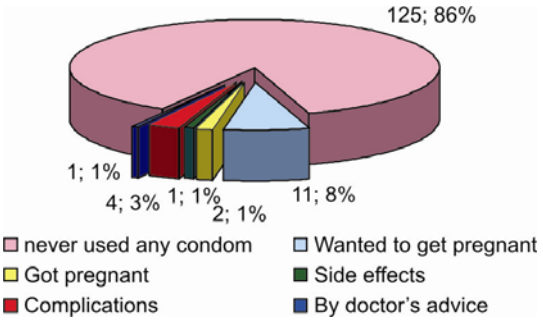


Chart. 4.37. Reasons of abstaining from using modern methods of contraception by women or men

Special attention should be paid to knowledge of interviewed women on modern methods of contraception; the vast majority of respondents had wrong opinion (Chart 4.38).

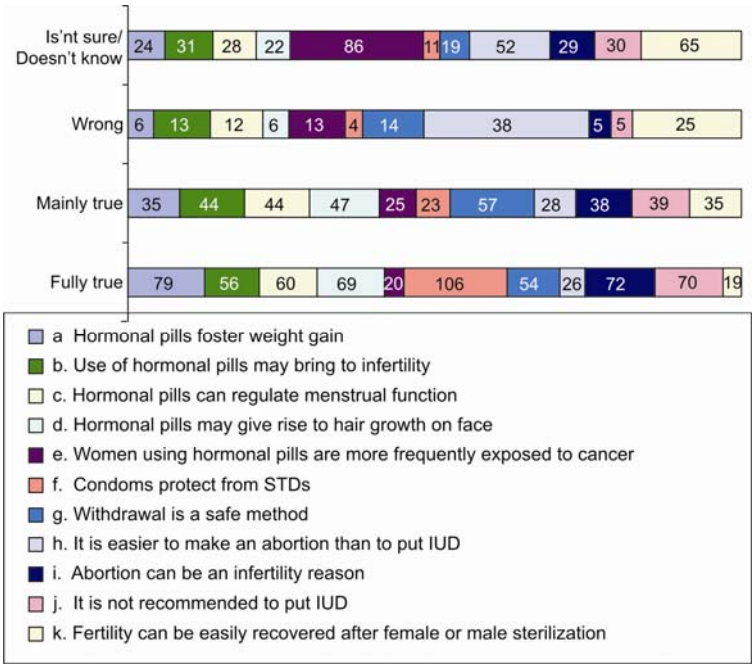


Chart. 4.38 The opinion of the interviewed women and their relation to modern contraceptive methods

Hereby the data of detailed investigations of pregnancies and their outcomes the women with secondary infertility had (Chart 4.39).

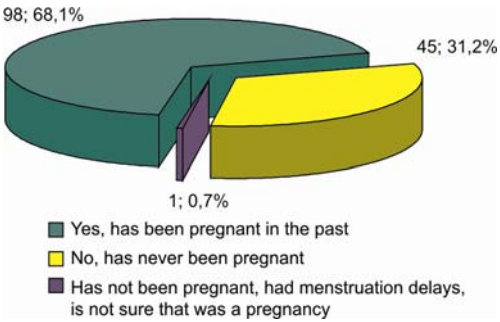


Chart. 4.39 Women ever being pregnant

Outcomes of each of the pregnancies

Among 98 women suffering infertility 69 deliveries discharged with alive fetus(70.4%) were recorded, meanwhile 26 women mentioned one pregnancy in the anamnesis, 37 women mentioned 2 pregnancies and 6 women - 3 pregnancies (Chart 4.40).

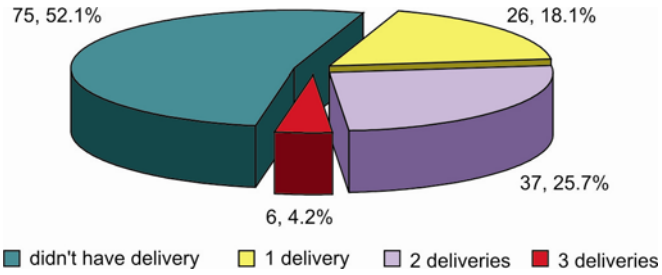


Chart. 4.40. Live fetus deliveries

There were 2 cases of deliveries with stillbirth. The outcomes of recent pregnancies are presented in Chart 4.41. 21 pregnancies had been terminated at different terms, 2 of them were deliveries. 9 women had in term deliveries.

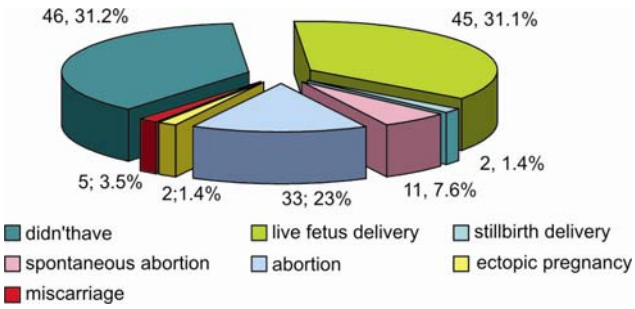


Chart. 4.41 Last delivery outcomes

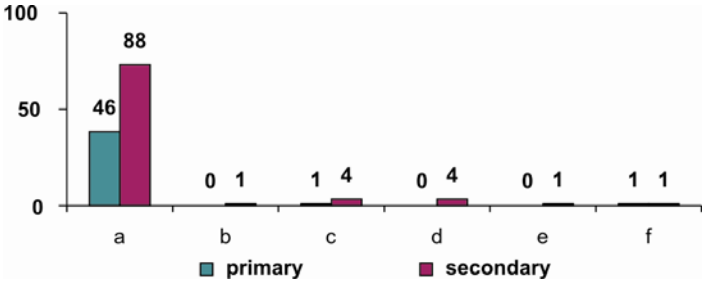
CHAPTER 5
ACCESSIBILITY AND QUALITY OF MEDICAL ASSISTANCE IN CASES OF INFERTILITY

5.1 Investigation algorithm in case of unfecund marriages

It is known that the STDs and surgical interventions are considered to be important factors fostering infertility. From that point of view, the anamnesis of investigated infertile women and men didn't vary much from those of the general group, as they hadn't mentioned STDs, particularly, warts, ulcers during the interview.

According to the data provided by women, only 2 men with primary infertility and 3 men with secondary infertility had STDs in the anamnesis. All of them had received treatment.

The surgical interventions performed on abdomen and pelvis minor of the infertile women mentioned by 10 (6.9%) are of particular interest, 4 (2.8%) women had postoperative complications, connected with inflammatory process, with affecting neighboring organs or with anesthesia (Chart 5.1). It should be mentioned that all 4 women were from the group of secondary infertility.



a- didn't have operation
b- operation on uterus
c- ovary operation
d- operation on tubes
e- operations on pelvic organs
f- laparotomic operations

Chart.5.1 Type and occurrence of surgical operations on pelvical organs

Only 4 (4.1%) women mentioned experiencing postoperative complications, which were expressed by inflammatory process, influencing neighbou-

ring organs, complications conditioned by anaesthesia and medical treatment.

The examination of the data regarding the non-applying of respondents to a medical institution with reproductive health problems for passing an investigation or receiving a treatment showed that the majority of respondents in need of medical assistance didn't apply because of several reasons, and the most frequent reason mentioned by every 2nd respondent was financial problems, every 4th respondent was afraid of side influence and of receiving insufficient treatment. Many couples consider time factor as an obstacle.

As it can be seen from the data of the Table 5.1 every third respondent, have applied to sorcerer, every 5th applied to private practitioner or private clinic. Only 21 (14,6%) of women have applied to a specialized center.

Table 5.1

Division of medical institutions by applying rate

N/N	Where or whom to apply	number of women	%
1	Junior surgeon's and obstetrics station (JSOS)	6	4.2
2	Village ambulatory / hospital	9	6.3
3	Women's polyclinics	32	22.2
4	Regional maternity house/hospital	18	12.5
5	Specialized center	21	14.6
6	Private clinic	19	13.1
7	Private doctor	11	7.6
8	Sorcerer	22	15.3
9	Other	6	4.2
		144	100

The interviewed women responded that they passed a number of examinations connected with reproductive health disorders, the list mentioned by them is presented in Table 5.2 and Chart 5.2.

Table 5.2

List of investigations performed to the respondents

N	Investigation performed	yes		no		doesn't know	
		%	quantity	%	%	quantity	%
1	Blood pressure measured	118	88.9	10	6.9	16	11.1
2	General physical examination	18	12.5	85	59.0	41	28.4
3	Gynecological examination	89	61.8	27	18.7	28	19.4
4	Mirror examination	96	66.7	32	22.2	16	11.1
5	Smear tests	78	54.1	46	31.9	20	13.9
6	Testing for infections	68	47.2	64	44.4	12	8.3
7	Testing for the quantity of hormones in blood	41	28.4	75	52.1	28	19.4
8	Cytological test of the uterus cervix	21	14.6	115	79.9	8	5.5
9	Colposcopy	19	13.2	121	84.1	4	2.8
10	Sonography	115	79.9	26	18.1	3	2.1
11	Diagnostic scrape of the uterine cavity endometrium	29	20.1	111	76.4	4	2.8
12	Hysterosalpingography	57	39.6	85	59.0	2	1.4
13	Laparoscopy	35	24.3	109	75.6	0	0
14	Hysteroscopy	8	5.5	136	94.5	0	0
		144 in total					

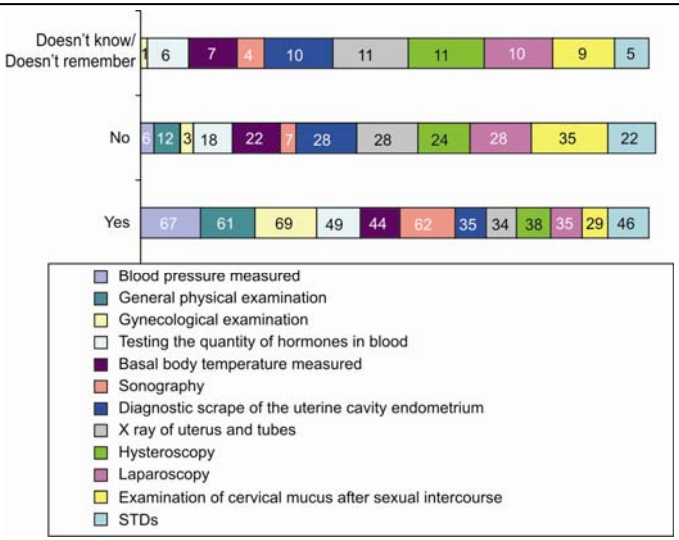


Chart.5.2 List of investigations performed to the respondents

All the questions mentioned in the tables 5.2 and 5.3 have been read to the respondents, and they were asked to point out those investigations that they passed when applying to a medical institution. The data received show that the examination of women experiencing infertility problems was carried out in an insufficient level, even routine examinations, gynecological examination has been performed in 61.8% cases, mirror examinations - in 66.7% cases, smear tests - in 52.3% cases. Strictly insufficient is the level of investigations for revealing the infections - 47.7%, testing for the quantity of hormones in blood - 28.4%. The scope of endoscopic investigations is at a very low level, as the majority of patients have applied to sorcerer for investigation.

Table 5.3

List of investigations performed to the husband (partner) of the respondent

N	Investigation carried out	yes		no		doesn't know	
		number of women	%	number of women	%	%	number of women
1	Measurement of blood pressure	78	54.1	41	28.4	25	17.4
2	General physical observation	56	38.9	62	43.1	26	18.1
3	Examination and tests for Urogenital infections	45	31.2	64	44.4	35	24.3
4	Sperm investigation	15	10.4	120	83.3	9	6.25
5.	Doppler sonography	62	43.1	42	29.2	40	27.8
6	Investigation carried out	31	21.5	70	48.6	43	29.9
		Total - 144					

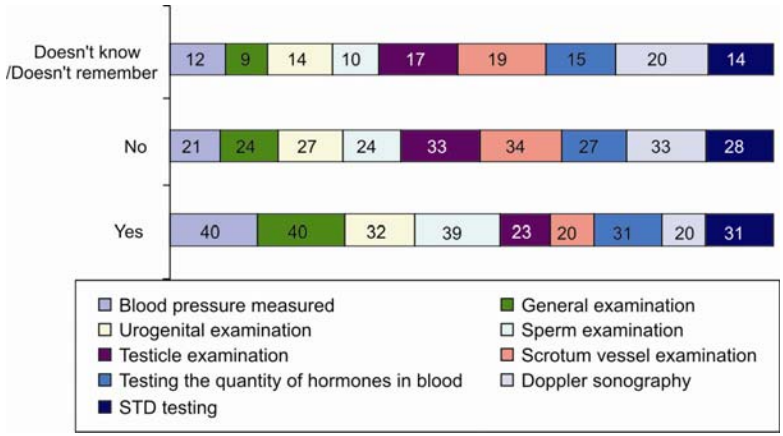


Chart. 5.3 List of investigations performed to the husband (partner) of the respondent

All the questions mentioned in the table have been read to the respondents, and they were asked to point out those investigations that they passed when applying to a medical institution.

The volume of the husbands (partners) of the respondents is much more concerning. According to data received from 144 respondents for 50% of them not a single investigation was carried out, they haven't even undergone sperm investigation. And only small number of men responded that certain medical investigations for detecting infections and hormonal tests, correspondingly 31% and 10% were carried out. The data received show that the examination of unfecund couples has been carried out at very insufficient level.

Accessibility of reproductive medical aid

Special attention should be paid to the investigation of peculiarities of applying to medical institutions of married couples having reproductive health problems. Below one can see the table 5.4, where we tried to find out if the respondent or her husband (partner) applied to a medical institution or traditional clinic (sorcerer) with the aim of receiving consultation or medical assistance for problems concerned with their reproductive health.

Table 5.4

N	Person who applied	Quantity	%
1	neither of them	16	11.1
2	only woman applied	37	25.7
3	only husband (partner) applied	14	9.7
4	woman applied, but she is not sure if her husband (partner) did	12	8.3
5	both of them applied	65	45.1
	total	***144***	**100**

Although only 16(11.1%) infertile women had not applied to medical assistance, the majority of infertile women - 132 (93%) in number, hadn't received proper treatment, which states the low quality of medical assistance in cases of infertility problems.

Special attention should be paid to the fact that either in cases of primary or secondary infertility, the patients had received occasional non-systemic treatment. Thus, correspondingly 5 (10.8%) and 7 (7.1%) women suffering

from primary and secondary infertility had received treatment with vitamins/biostimulators, antibiotics/sulphanilamides.

Long-term medication (psychotropic medications, Antibiotics, Sulphanilamides, hormonal drugs) are used by every 10th woman and every 7th man having infertility, meanwhile any difference between primary and secondary infertility was not detected (Chart. 5.4):

Only 5 (3,5%) women had received specific ovary stimulation and hormonal treatment.

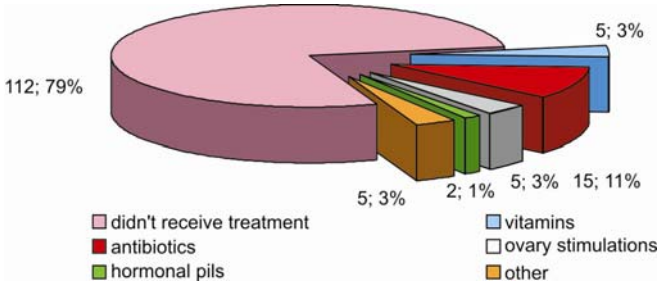


Chart 5.4 Treatment received by infertile married couples

As for the treatment of the partner, 73 (50,7%) women mentioned treatment, 40 (27,8%) of men didn't receive treatment, 31 (21,5%) had received treatment, but don't remember details (Chart 5.5).

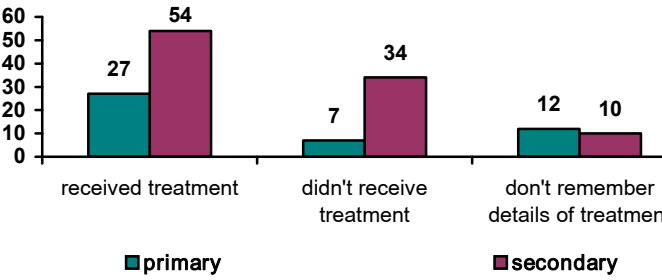


Chart.5.5 Treatment of men in cases of primary and secondary infertility

The types of treatments received by men are presented in Table 5.5

Table 5.5

Type of treatment received by the male respondents

N	Method of treatment	Number of women	%
1	Antibiotics / Sulphanilamides	25	51.0
2	Physiotherapy	12	24.4
3	Antibacterial suppositories	25	51.0
4	Non-traditional, sorcerer's means	19	38.7
5	Vitamins/ Biostimulators	18	36.7
6	Surgical intervention	8	16.3
7	Hormonal treatment	19	38.7
	49 in total		

In general both infertile women and men received non-specific and insufficient treatment.

The respondents had been asked about the reasons of not receiving treatment.

Table 5.6

Reasons of non-applying

N	Reasons of non-applying	number of women	%
1	Decided to wait a little bit more, hoping the illness will pass without treatment	19	14.4
2	Financial problems	65	49.2
3	Don't know where to apply for addressing such issues	8	6.06
4	Husband objects	6	4.5
5	Relatives object	10	7.6
6	Are afraid of side effects or complications	31	23.4
7	Don't have time	43	32.5
8	Absence of favorable sanitary and hygiene conditions in medical institutions	35	26.5
9	Other	8	6.06

As a result of survey infertility reason has been revealed in 29 cases among women (20,1%), only in 3 (2,1%) cases among men, in 8(5.6%) cases among both husband and wife, in 33 (22,9%) cases the reason had remained unrevealed.

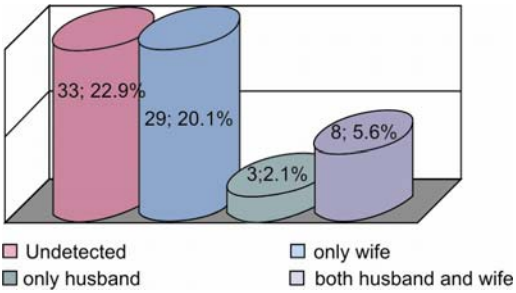


Chart. 5.6 The infertility reason detected

The factors of infertility detected among examined women or men are presented in Charts 5.7 and 5.8.

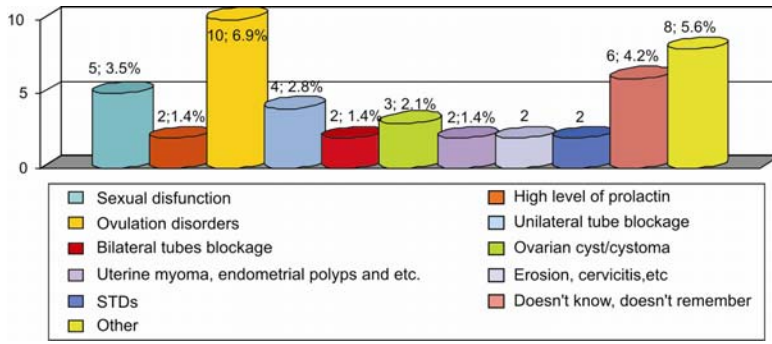


Chart. 5.7 Any of infertility reasons diagnosed among women

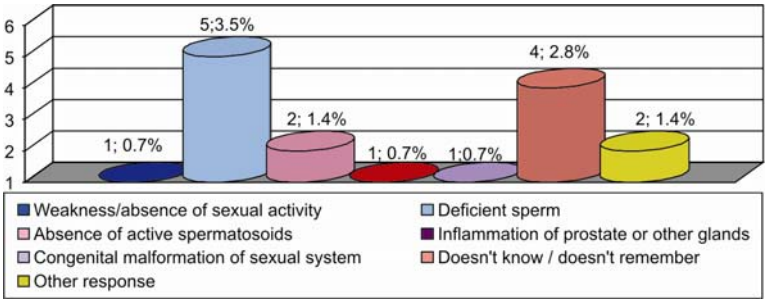


Chart.5.8 Any of infertility reasons is diagnosed among husbands / partners

Only 7(4.2%) women and 5 (10.2%) men reported surgical interventions in the anamnesis, which are presented in the Charts 5.9 and 5.10.

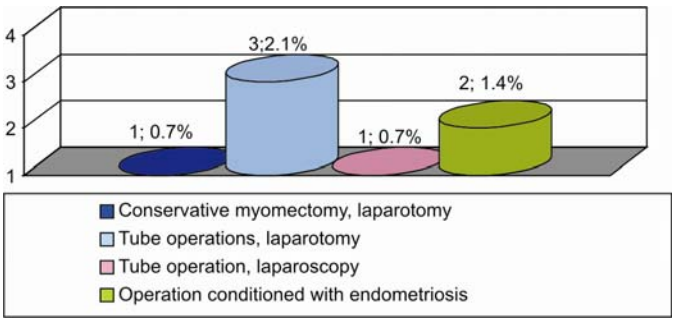


Chart.5.9 Surgical interventions the women have had

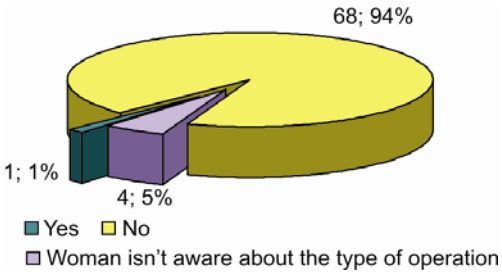


Chart.5.10 Surgical interventions husband/partner has had in total

The menstrual function character is one of the most important attribute of childbearing, particularly, pains during menstruation, duration of menstruation, blood quantity, etc. The character of menstrual function is presented in Charts 5.11 – 5.13.

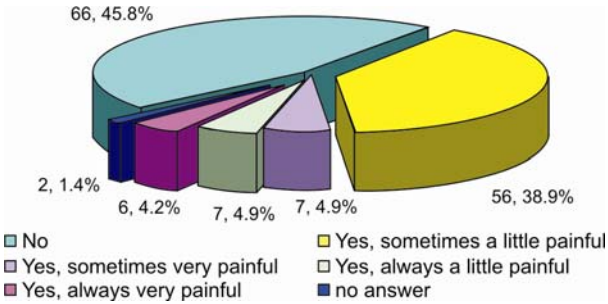


Chart.5.11 Pains during menstruation before starting sexual life

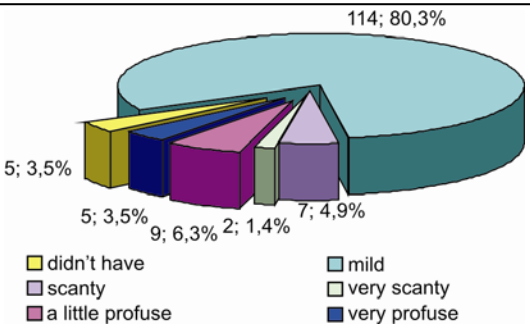


Chart. 5.12 Character of menstrual function at the time of examination

The majority of examined women 114 (80.3%) had regular menstrual cycle. 32 (19.7%) of infertile women had menstrual cycle disorders, particularly, changes in the amount of discharged blood (hypermenorrhea and hypomenorrhea). As for the duration of menstruation, 41 (28.5%) had menstrual duration disorders ¥polymenorrhea or oligomenorrhea¤.

Meanwhile, women suffering from primary infertility had definitely more menstrual disorders as compared with those suffering from secondary infertility, correspondingly 31(67.4%) and 42(42.8%) $P > 0.001$.

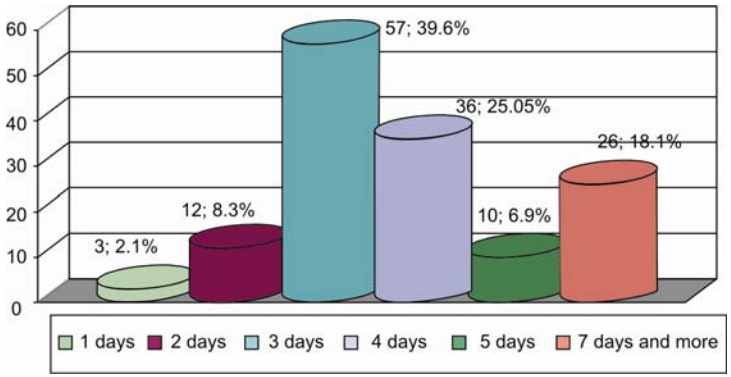


Chart. 5.13 Duration of menstruation

The most important signs of hyperandrogeism are hypertrichosis, hirsutism, which was revealed in 11 (7.6%) cases (Chart 5.14).

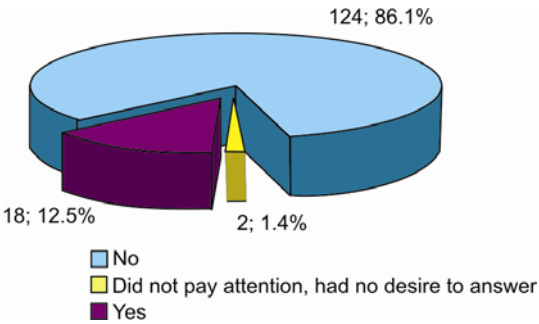


Chart.5.14 Excessive hair on face or other parts of body

The vast majority of women having hirsutism manifestation mentioned that hirsutism initiated in the age above 20, and only 2 women stated that the disease initiated in adolescence. (Chart 5.15)

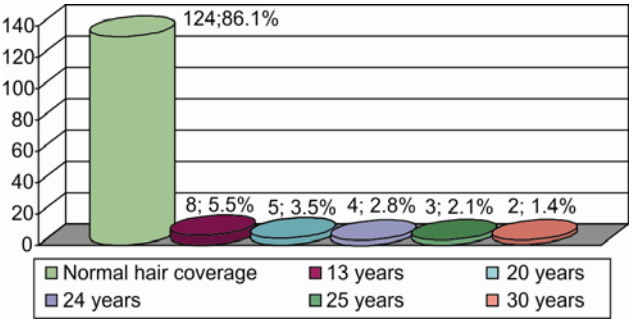


Chart.5.15 The age at hirsutism symptoms start

The mentioned disorder hadn't been considered to be important and only 13 women had applied to medical assistance, 6 out of which had received treatment (Chart 5.16).

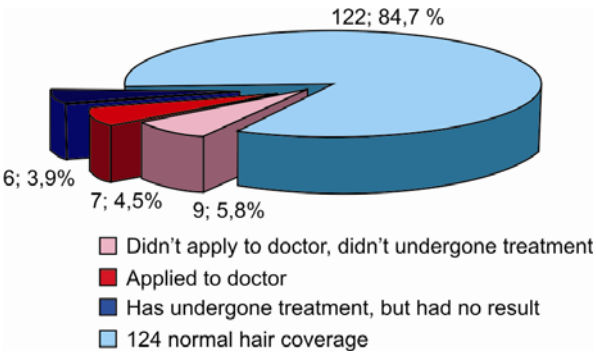


Chart. 5.16 Applying to doctor for having excessive hair on face or other parts of the body

The most important clinical manifestation of hyperprolactinemia is the discharge from nipples, which was mentioned by 16 women (Chart 5.17).

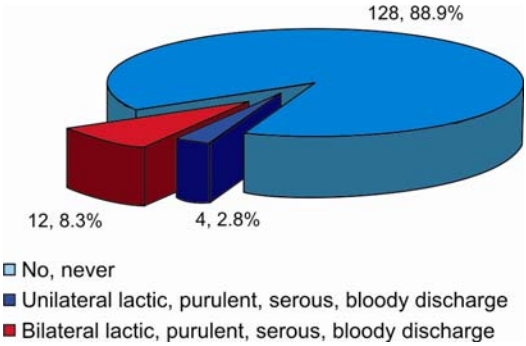


Chart.5.17 Discharge from mammary glands

Some environmental factors such as air pollution with chemical agents, heavy metal acids, particularly lead, chloroprene may promote to origination of reproductive health disorders. Every 5th woman mentioned professional insalubrity: contact with chemical, radioactive substances, being exposed to X-ray, ionizing radiation (Chart 5.18).

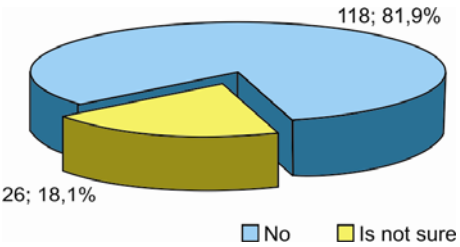


Chart.5.18 Negative impact of environmental and factors on health

6 (4.2%) women had genital and vaginal inflammation (Chart 5.19 – 5.20).

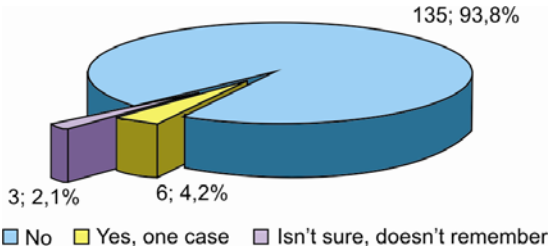


Chart. 5.19 Inflammation of external genital organs

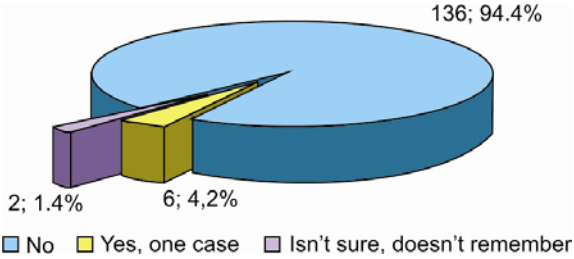


Chart.5.20 Vaginitis

Every 5th investigated woman mentioned inflammation of internal genitals – cervix, endometrium, ovaries, tubes, pelvis minor, peritoneum, urinary bladder (Chart 5.21-5.25).

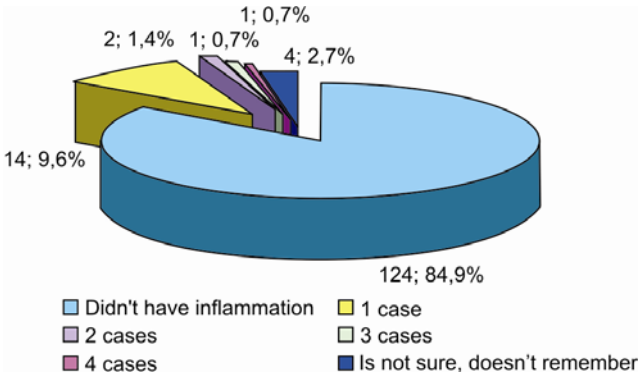


Chart. 5.21 Cervicitis or erosion

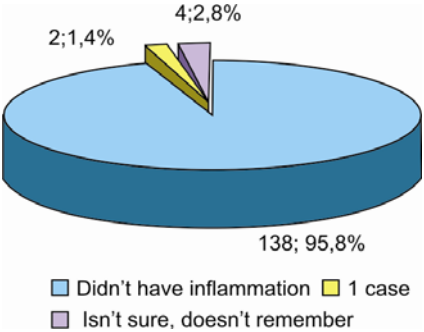


Chart. 5.22 Inflammation of uterus, endometrium or parametritis

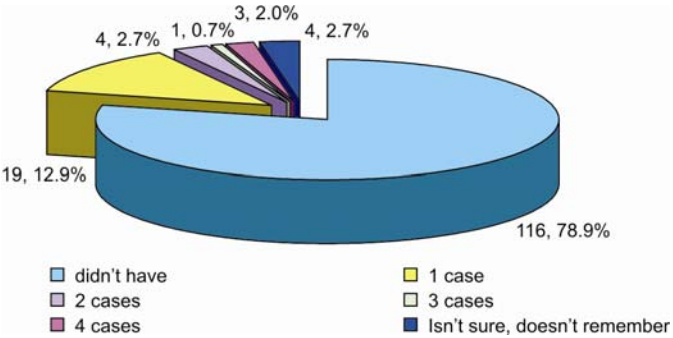


Chart.5.23 Ovary inflammation

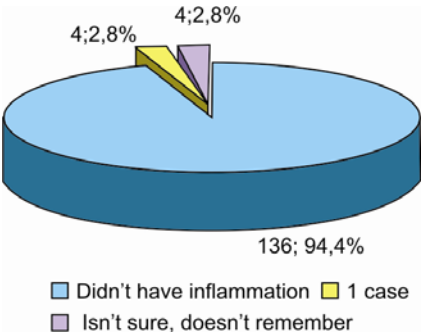


Chart.5.24 Inflammation of uterine tubes

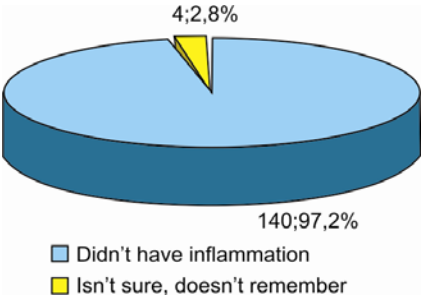


Chart. 5.25 Peritonitis, pelvioperitonitis

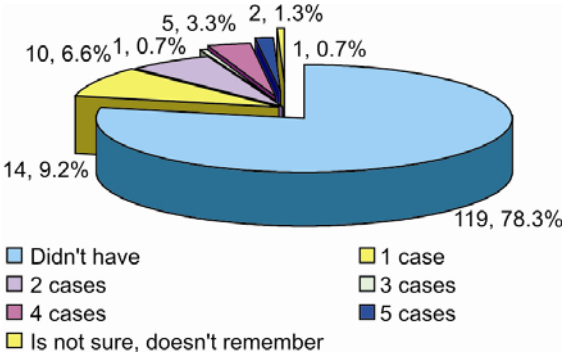


Chart.5.26 Urinary bladder inflammation (cystitis)

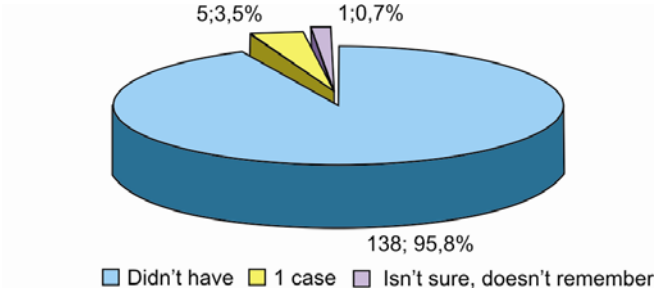


Chart.5.27 Ovarian cyst

10 (6.9%) women mentioned ovarian problems, i.e. ovarian cyst and cystic disease, as well as uterine myoma and hyperplasia of endometrium.

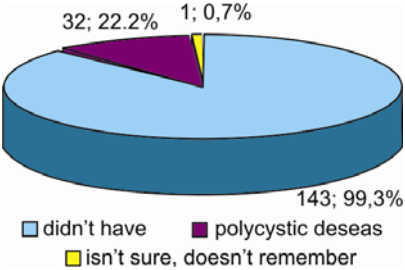


Chart.5.28 Ovarian polycystic disease

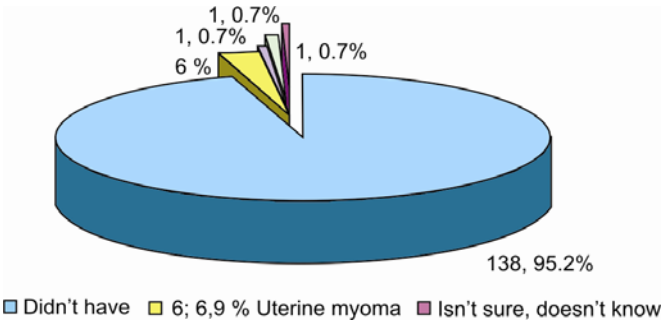


Chart.5.29 Uterine myoma or fybroma

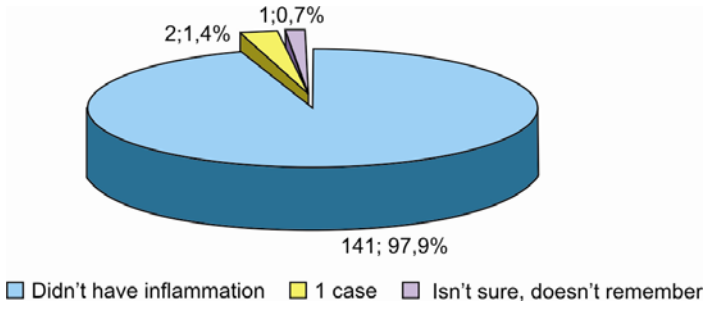


Chart.5.30 Cervical or mucous polyps

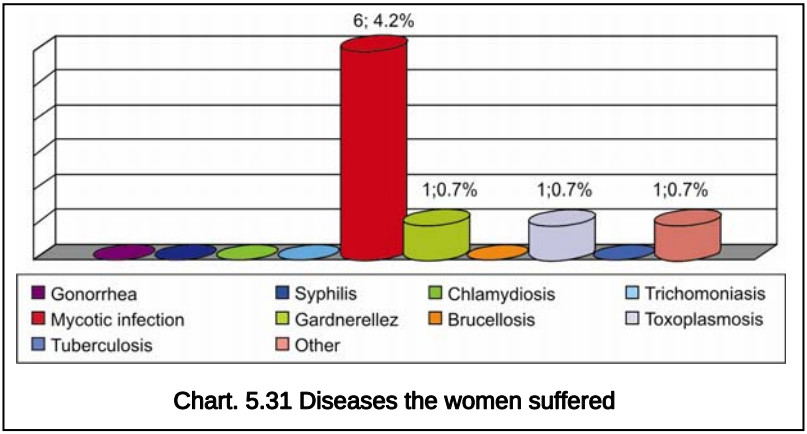


Chart. 5.31 Diseases the women suffered

Only 9 women mentioned STDs in the anamnesis, mainly mycotic infection, gardnerellosis.

PART 2
CHAPTER 1
ETIOLOGICAL STRUCTURE OF UNFECUND MARRIAGES

1.1 The unfecund women and men have passed examinations according to the following algorhitm:

- screening on sexually transmitted infections, including HIV, syphillis, gonorrhea, chlamydia
- examination by functional diagnostic tests during two menstrual periods
- examination of urogenital infections, bacterioscopic and microscopic examination of vaginal smear
- ultrasound examination of organs of pelvis minor
- hysterosalpingography
- hormonal examination
  - Identification of level of prolactin and dehidroepiandrostendion (DHEA) on the 3rd- 7th day of menstruation
  - Identification of pregnandiol on the 21th day of menstruation
- additional examinations according to indications

1.2 ULTRASOUND EXAMINATIONS OF THE GYNECOLOGICAL AND PELVIS MINOR ORGANS

All 144 women suffering from infertlity have undergone ultrasound examinations of gynecological and pelvis minor examinations.

STDs were also examined (gonococcus, micoplasma, thrichomonas, chlamydia, gardnerella, mycotic infection, bacterial coccus), as well as identification of the level of several hormones (prolactin and dehidroepiandrostendion) in womens' blood.

Before starting the investigation each woman was told about her right not to participate in the investigation and smear test, and has signed an agreement form which allowed the doctors to examine her. All the participating women gave their written concent for examination.

1.2.1. Investigation of external and internal genital organs

During the examination of the external genitals and vagina no pathologies, ulcers and warts were revealed.

Examination of internal organs showed that every third patient 57(39,6%) had some kind of uterine and adnexa uteri pathologies - uterus and ovary size changes.

1.2.2. Condition of cervix

The cervix has a very important role in the process of fertilization.

Besides the mirror examination of cervix, a microscopical examination of vaginal smear, PAP-test, and in case of necessity, colposcopy had been performed. Some kind of uterine pathologies (endocervicitis, erosion, ruptures) had been revealed in every 5th woman - 31 (21.5%).

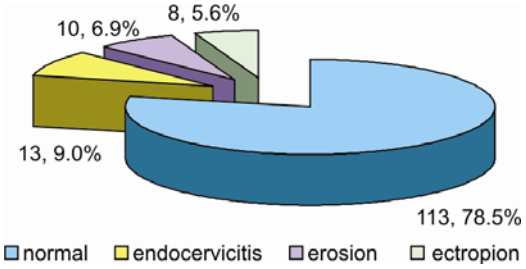


Chart 1.1 Condition of cervix

1.2.3. Result of ultrasound examination of internal genital organs

The ultrasound examination was carried out by a portable US scanner “ALOKA”, that works in the real time regimen.

The results ultrasound examination showed that every 9th examined woman 16 (11.1%) had some kind of uterine pathology (Table 1.1), most frequent is hypoplastic uterus - 6 (4.2%), pathological retroflexion - 5 (3.5%), uterine submucous mioma - 3 (2.1%), polyps of uterine cavity - 2 (1.4%).

Table 1.1

Results of ultrasound examination of uterus

		Revealed pathology	%
1	Normal	128	88.8
2	Enlargement of uterus due to submucous myoma	3	2.1
3	Uterine hypoplasia	6	4.2
4	Polyps of uterine cavity	2	1.4
5	Pathological retroflexion	5	3.5
	Total	**144**	**100**

Every 5th examined woman - 29 (20.1%) had bilateral ovary enlargement with polycictic ovaries, 7 (4.9%) had ovary hypoplasia, 7 (9.1%) had unilateral ovary enlargement as a result of a cyst, meanwhile in 8 (5.6%) cases thatwas a right ovary enlargement, in the rest 5 cases that was a left ovary enlargement.

According to data received, uterine and ovarian pathologies according to place of living occurred with similar frequency.

Table 1.2

Results of ultrasound examination of adnexa uteri

	Ovaries	right		left	
1.	Normal	100	69.4	103	71.5
2.	Enlarged	29	20.1	29	20.1
3.	Hypoplastic	7	4.9	7	4.9
4.	One-side enlargement	8	5.6	5	3.5
	Total	**144**	**100**	**144**	**100**

According to received data, pathologies of uterus and ovary in different population areas (village, city) have been registered with uniform frequency.

Regarding ovary, augmentation of those because of micro cyst alteration is identified two times more often among urban population compared to that among rural population.

Pathology of uterine neck, endocervicitis, erosion and ruptures were identified at every fifth of examined women (31, 21.5%).

1.3. Prevalence of sexually transmitted deseases among infertile women.

Tests of women on Chlamydia trachomatis and Ureaplasma were performed by method of direct immune fluorescence (DFA) of biological materials extracted from uterine neck, and tests on trichomoniasis, gonorrhea, Gardnerella vaginalis, candidosis by Gram method through bacteroscopic examination of smear. In suspicious cases, it has been decided to implement inoculation for identification of gonorrhea.

58 women from urban and 86 women from rural areas were examined.

Vast majority of women were diagnised to have 110 (76,4%) bacterial coccus, Gardnerella vaginalis - 34 (23.6%), fungus - 32 (22,2%), Chlamydia trachomatis - 23 (15.9%), trichomoniasis - 10(6.9%), gonorrhea -in 2 cases. Distribution of identified sexually transmitted deseases is presented in Table 1.3.

Total number of sexually transmitted deseases among women was 182, hence each woman had 1.3 sexually transmitted desease; no significant variations of this coefficient were detected among women from urban and rural areas.

Table 1.3

Prevalence of sexually transmitted deseases among examined women

Urban/ Rural	Sexually transmitted diseases												
	gonorr-hea		trichomo-niasis		chlamydia trachomatis		gardnerella vaginalis		fungus		bacterial cocus		total
		%		%		%		%		%		%	
Urbam	0	0	4	5.6	9	12.5.	13	18.1	12	16.7	34	47.2	72
Rural	0	0	6	5.5	14	12.7	21	19	20	18.1	49	44.5	110
Total	0	0	10	5.5	23	12.6	34	18.6	32	17.5	83	45.6	182

Thereby, it was revealed, that vast majority of 144 examined women have disbiosys, vaginitis or a sexually transmitted desease. According to Spirman's coefficient a direct correlation was revealed between STDs and infertility.

1.3.1 Prevalence of Chlamydia trachomatis among infertile women.

Chlamydia infection plays a significant role for originatioon of infertility, as it leads to obstruction of tubes and salpingitis.

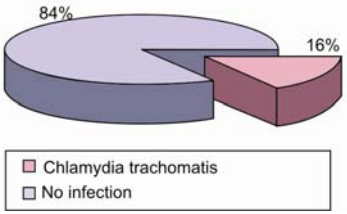


Chart 1.2 Prevalence of Chlamydia within population

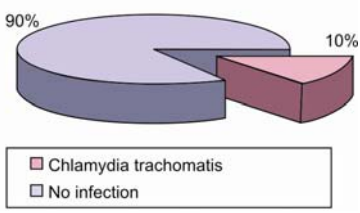


Chart 1.2 Prevalence of chlamydia among infertile woman

- Among 144 examined women 23 (15.9%) had Chlamydia infection.
- It is 1.5 times higher among women suffering primary infertility compared to its prevalence withing population in general. Among total number of infertile women this infection has been diagnosed in 2.5 times more in cases of secondary infertility compared to cases of primary infertility.
- Accroding to survey results analysis, no significant correlation has been revealed between prevalence of Chlamydia infection of areas of population (urban/rural).
- Results of research in regard to prevalence of Chlamydia infection among age groups show, that this infection is particularly widespread mong those aged between 20-29 (18.7%) and the lowest rate is among those aged 35 and older (7.2%).

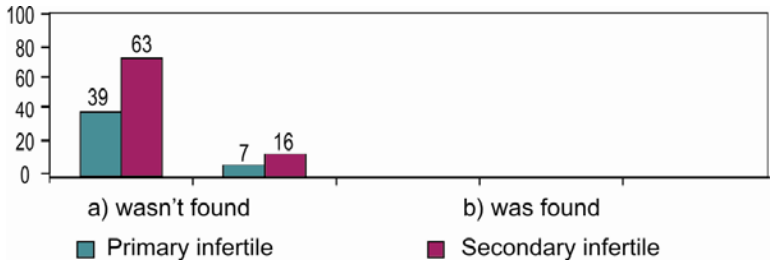


Chart1.4. Correlation between the Chlamydia infection and type of infertility.

1.4 Histerosalpingographia results

Research results

According to data of histerosalpingographia, occlusion of different parts of uterine tubes and pelvic adhesions resulted in infertility of 63 (43.1%) of examined women.

In vast majority of cases 41(66.1%) diseases of uterine tubes were linked with inflammatory process and often had double nature. In majority of cases ampulla of uterine tube was the subject of the inflammation.

Table 1.4

Results of ultrasonic examination of uterine appendages

	tubes	right		left	
1.	Uterine tubes patency	78	54.2	103	71.5
2.	Obstruction of tubes	66	45.8	41	28.4
3.	Obstruction of uterine appendages	46	31.9	32	22.2
4.	Obstruction of interstitial part	12	8.3	9	6.25
	Total	**144**			

High index of infection has been diagnosed among women suffering obstruction of tubes: 2.2 infections per each woman. Among examined women, as causative agents were studied various types of infections (bacteria, fungus, protozoa, Chlamydia, etc.), which have multiple strains and forms and have been identified separately or in large colonies.

In case of frequency of Chlamydia infection in materials taken from the neck of uterine varied up to 50%. Chlamydia mostly is accompanied by Candida fungus, bacteria and trychomonada.

1.5 Endocrinous types of female infertility.

Among 144 examined infertile women 65 (45.1%) were diagnosed to have menstrual irregularities and different hormonal dysfunctions such as hyperprolactinemia, hyperandrogenemya, hipoprogesteronemia, accompanied by menstrual disorders, dysovulation and insufficiency of lutein phase.

Table 1.5

Results of ultrasonic examination uterine

	Detected pathologies	Absolute number	%
1	Normal menstrual cycle with ovulation	79	54.8
2	Menstrual dysfunction: amenorrhea, oligomenorrhea	18	12.5
3	Normal menstrual cycle: unovulation	25	17.4
4	Insufficiency of lutein phase	24	16.7
5	Unovulation	45	31.2
6	Insufficiency of lutein phase	22	18.3

Note. One individual can have several pathologies.

Ovulation or absence of such has been confirmed also by supersonic follicle measurement. During daily examinations within the pre-ovulation phase fixing of growing dominant follicle with diameter over 20mm was implemented with following assessment of that follicle during regular examination (disappearance of dominant follicle and origination of free liquid in Douglas cul-de-sac).

In every second case dysovulation was conditioned by Polycystic ovary syndrome (PCOS), which was confirmed by ultrasonic scanning of ovary.

- Enlarged ovary (value over $10cm^3$ or maximal size over 4cm),
- Over 15 rounded non-echogenicity formations sized 3-8mm, situated under the ovary capsule,
- Hyperechogenicity of ovary warp.

Based upon analysis of results of histerosalpingographia and clinical ultrasonic examination of uterine and ovary it has been detected, that 35 (24.3%) women were suspected to have endometriosis of uterine and ovary, which was also confirmed during laparoscopic examination.

In 12 (8.3%) cases, reasons of infertility remained unrevealed.

1.6 Associate reasons

During examination of spouses, among 61(42.4%) married couples apart from detected reasons of female infertility there have been detected also reasons of male sterility.

Hence, the following reasons of female infertility have been identified (Table 1.6)

Table 1.6

Etiological structure of female infertility

	Pathology	**Abs. number**	**%**
1	Pathologies of uterine structure	16	11.2
2.	Pathological deviation of ovary	31	21.5
3	Sexually transmitted diseases and inflammatory processes in genitals	38	26.4
4	Tubal and peritoneal reasons of infertility	62	43.1
5	Genital chlamydios	23	15.9
6.	Endometriosis	35	24.3
7	Uterine myoma	10	6.9
8	Endocrinous reasons of female infertility	45	31.2
9.	Immunological infertility	8	5.6
10	Undetected reasons of infertility	15	105
11.	Associate reasons of infertility onditioned by male and female factors	61	42.4

Note. Pathologies may be combined for one individual.

Chapter 2
RESULTS OF EXAMINATION OF STERILE MEN

Diagnostics of male infertility includes:

Clinical methods

1. Collection of anamnesis,
2. General medical examination,
3. Urogenital examination,

Laboratory methods of diagnostics

Semen analysis

1. Cellular examination of discharge of prostate and spermatic vesicles
2. Tests on sexually transmitted diseases, including HIV, syphilis, gonorrhea and Chlamydia.
3. Tests on genito-urinary infections,
4. Examination of ejaculate: PH, viscosity, density and motility of spermatozoids (A+B+C+D), types of pathologies, leukocytes, etc.
5. Identification of antispermal antibodies,
6. Ultrasonic examination of organs of small pelvis and external genitals,
7. Ultrasonic examination of prostate,
8. Hormonal screening: testing of prolactine and testosterone in men's blood.

Special attention must be paid to the fact, that among 941 examined men only 49 (5.2%) mentioned their sterility.

Whereas among 144 unfecund married couples 61 (42.36%) have been diagnosed to have associate reasons of infertility conditioned by male and female factors, which means, that infertility was diagnosed in 110 cases of men, which in its turn means, that interfility among men makes 11.68%.

Majority of men, including sterile men had first sexual intercourse in teenage age, 6.9 ± 02 years before marriage.

Men had in average 3.5 ± 0.5 sexual partners.

According to the results of the given survey reasons of male sterility are following:

Table 2.1
Etiological structure of sterility

	Identified pathologies	Absolute numbers	%
1.	Varicocele	7	6.4
2.	Inflammatory diseases of genitals	28	25.5
3.	Pathozoospermia of unidentified nature	9	8.2
4.	Immunological sterility	29	26.4
5.	Congenital defects of development (cryptorchi(d)ism, hipospadia, epispadia, etc.)	13	11.8
6.	Surgeries of inguinal hernia, hidrocele, urethral stricture, surgeries of vesica urinaria, simpathectomia, etc.	8	7.3
7.	Endocrinous reasons of infertility	24	21.8
8.	Sexual and ejaculatory disorders	69	62.7
9.	Unejaculation	17	15.5
10.	Oligospermia	22	20.0
11.	Oligozoospermia	58	52.7
12.	Azoospermia	19	17.3
13	Astenozoospermia	36	32.7
14	Teratozoospermia	21	19.1

Note. The pathologies may be coincided in one case.

Listing of presented reasons shows the diversity of male infertility and difficulties of diagnostics, when every single case implies exclusion of one or several factors and revealing of main disorders, which are of real importance for the patient and the married couple.

CONCLUSIONS

The following conclusions can be made at the end of the results received:

1. The coincidence of sexual life start and marriage age is characteristic for Armenian population.

2. After getting married women plan to have a child and usually do not delay the birth of a child.

3. The orientation of examined families originally was to have small number of children, the reasons mentioned by the majority of couples were insufficient social conditions, absence of apartment or stable income. 1/3 of the respondents had planned small number of children (1-2) irrespective of conditions, which shows changes in reproductive behavior.

4. As a result of the study it has become evident that either women or men have insufficient knowledge about modern methods of contraception, sexuallytransmitted diseases,their types, symptoms, ways of transmission. The respondents' knowledge was especially scanty in rural areas.

5. The experience of women using modern contraceptive methods was at a low level, particularly rare are the cases of using surgical sterilization, female condoms, hypodermic hormonal implants. The knowledge of the respondents regarding modern methods of contraception was also at a low level.

6.The traditional methods of contraception are used more frequently, in particular, the withdrawal, abstinence, rythm method, which have low effectiveness and are often accompanied with unwanted pregnancies.

7. Artificial terminations of pregnancy still remain and are often utilized as a fertility control method. They have a certain role in the etiology of secondary infertility.

8. Another important and frequently ocurring reasons of infertility are sexually transmitted diseases, especially chlamydia, which is revealed 1.5 times more frequently in cases of infertility as compared with ones not having the problem.

9. Occurrence of gonorrhea was not revealed, thus chlamydia examination instead, especially among pregnant and patients having reproductive health disorders should be considered mandatory.

10. In case of unfecund marriage both partners should pass examination according to a developed algorhytm, which includes the final outcome – detection of infertility reason. The detailed examination of partners and accuracy of diagnosis have crucial role in the issue of further treatment and possibility of having long-expected children. The absence of the optimal variant of examination algorythm, exclusion of non-mandatory and non-inormative means is an obstacle for rapid and precise detection of infertility factors

11. In case of infertility, examination should be started from men, as unfecundity reasons among men can be revealed easier and faster. Besides, often men consider their wifes to be the reason of their unfecundity and do not apply to doctor themselves.

12. The combined reasons of female and male infertility are recealed in 61 (42.36%) married couples, which once again proves the necessity of initiating the examination from husband.

13. During the recent 2 decades a decreasing tendency of infertility, particularly secondary infertility was observed, thus according to data provided by the clinical epidemiological survey of infertility prevalence among 4349 married women implemented in 1989-1990 in Yerevan city, primary infertility was 3.2%, and secondary infertility - 21.4% (K.B.Akunts and co-authors).

In 1997-1998 M.A.Khachikyan and co-authors have implemented epidemiological study of women and men of reproductive age on a national level, comprising all the regions and Yerevan city, according to which the primary infertility among women was 3.4%, the secondary - 28,5%.

The ocurrence of primary infertility among men was 3.3%, and 15,2% for secondary infertility.

According to the results of the present study implemented in 2009 144 (16,8%) women out of 856 suffered infertility, 46 (5.37%) of the respondents had primary infertility, 98 (11,44%) of them - secondary infertility.

110 (11.7%) men out of 941 were sterile, 54 (5,7%) of which suffered primary, and 56 (5.95%) - secondary sterility.

14. Notwithstanding nearly two-fold decrease of infertility dynamics, it remains high as compared to the emergency level (15%) detected by World Health Organization (1993).In that case the infertility is observed as the main factor influencing the demographic situation of the country and from a social-medical problem, it turns to a national, state problem.

15. Infertility level is particularly high in Yerevan, Gegharkunik, Armavir and Shirak marzes.

16.Implementation of examination, treatment, especially by reproductive auxiliary technologies are inaccessible due to high prices, low awareness level of population, as well as due to low effectivity.

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