

## Young obstetrics and gynecology doctors – a valuable potential in overcoming the deficiency of specialists and decreasing of the maternal mortality rate in the districts of the Republic of Moldova

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### Abstract

**Background:** Synthesis of opinions about the quality of the professional training, barriers encountered in career growth and existing motivational factors for young specialists, provided by the residents in the field.

**Material and methods:** The study involves 80 residents of obstetrics and gynecology. A 31-item questionnaire was elaborated to conduct the study. The answers that participants provided were processed with the following software: Statistical Package for the Social Sciences (SPSS 20) and Microsoft Office Excel 2010.

**Results:** Most of the young specialists that have received a professional training, which relies in considerable amounts on public financial resources, do not want to be employed in district-level medical institutions, in spite of the fact that these institutions are in urgent need of medical specialists. This is a difficult situation which can cause major problems in providing medical assistance to the citizens. The reduced possibilities of administrating highly qualified medical assistance will eventually increase the maternal and prenatal mortality.

**Conclusions:** The career prospects of the residents in the public health system are highly insufficient and the employments in the rural areas are not enough attractive. As a consequence, it makes it challenging to assure an even repartition of young specialists in the obstetrics and gynecology field, in the most of the country's districts.

**Key words:** resident, district, medical institutions, employment, prospect.

### Introduction

In the Republic of Moldova exists a collection of documents, which are predestinated to help manage the needs and evolution of the public health services. The following documents focus particularly on controlling the sufficiency

of medical staff in order to meet the expected performances and increase the accessibility to highly qualified medical services. The documents under consideration are the following: "Strategy for the development of Nicolae Testemitsanu State University of Medicine and Pharmacy for 2011–2020"; "The plan of improving the medical and pharmaceutical education

in the Republic of Moldova for 2011-2020”; “National Health Policy for 2007–2021”; “Strategy for developing the health system for 2008–2017” and others [1, 2, 3, 4, 5].

Nevertheless, in the recent years, the assistance of the Mother and Child healthcare department encounters permanent decrease of obstetrician-gynecologists. The level of sufficiency of these specialists for the entire population is below the average level of the European countries. An increasing migration of personnel out of the medical system and an uneven repartition of medical specialists in the districts have been established in the prejudice of rural areas [6].

It is well known that the potential staff of the institutions consequently determines the quality of health services and therefore the rate of maternal mortality, which in the recent years has no tendency of diminishing [7].

The professional training of obstetrician-gynecologists in the Republic of Moldova takes place during the postgraduate studies, according to the system of residency that lasts 4 years and is provided by Nicolae Testemitsanu State University of Medicine and Pharmacy. In the period of 2009–2014, 75 young specialists (men 10, women 65) were trained to become obstetrician-gynecologists, which represents an average of 12,5 per year. 39 (52%) fresh graduated specialists were hired in the public medical institutions, 26 (67%) of them in the Municipality of Chisinau. The actual demand for obstetrician-gynecologists, in the public medical institutions, for the year of 2014 was a total number of 80 specialists, as reported by the Ministry of Health [8].

**Material and methods**

The study involves 80 residents of obstetrics and gynecology, who were divided into 4 groups in different years of study. A 31-item questionnaire was elaborated to conduct the study. The answers that participants provided were processed with the following software: Statistical Package for the Social Sciences (SPSS 20) and Microsoft Office Excel 2010.

**Results and discussion**

A total amount of the obstetrician-gynecologists residents, in different years of study, participated in the research: 1st year – 27 (34.0%), 2nd year – 16 (20.0%), 3rd year – 21 (26.0%), 4th year – 16 (20.0%). The proportion of male and female participants is 1:8; the repartition on the gender criteria is represented in fig. 1.

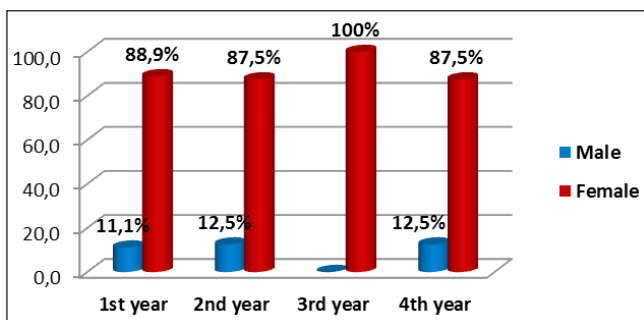


Fig. 1. Data are structured, considering the gender of the resident in correlation with the year of residency (%).

The average age of participants is  $29.5 \pm 1.25$  years. It is important to remark, that by the time of graduation, every 5<sup>th</sup> resident will reach the age of 35.

In the first year of residency, the rate of married respondents is  $48.1 \pm 5.59\%$ , while by the the 4<sup>th</sup> year of residency this percentage increases up to  $68.8 \pm 5.18\%$  ( $t = 2.7172$ ,  $p < 0.01$ ). Regarding the year of study the proportion of married and unmarried residents is the following: for the 1<sup>st</sup> year – 1.0:1.1, for the 2<sup>nd</sup> year – 1.3:1.0, for the 3<sup>rd</sup> year – 2.5:1.0 and the 4<sup>th</sup> year – 2.2:1.0. Figure 2 demonstrates the correlation between marital status of the resident and the year of study.

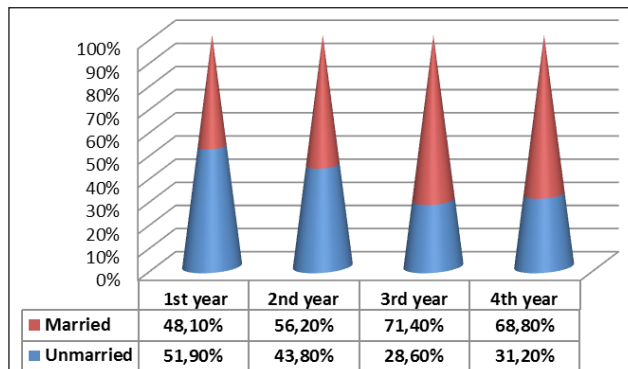


Fig. 2. The correlation between marital status of the resident and the year of residency (%).

The rate of respondents having children is higher in the first 2 years of residency (1<sup>st</sup> year – 40.7% and 2<sup>nd</sup> year – 37.5%), with an average of  $36.2 \pm 1.88\%$ .

Another interesting aspect to be analyzed is the residence of the participants, hence the 1<sup>st</sup> year residents have their residence in the rural areas of the country –  $33.0 \pm 5.26\%$ ; by the 4<sup>th</sup> year of study the rate decreases insignificantly to  $24.5 \pm 4.81\%$  ( $t = 1.1931$ ,  $p > 0.05$ ). It is necessary to add that 58.0% of the residents in the 1<sup>st</sup> year have their residence in the Chisinau Municipality and 8.0% in the Balti Municipality (fig. 3).

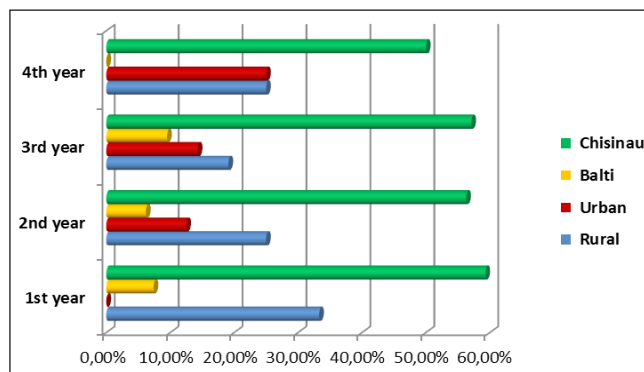


Fig. 3. Respondents are structured, considering the place of residence and the year of residency criteria (%).

The rate of students practicing their residency at the district-level institutions grows significantly: between the 1<sup>st</sup> year ( $33.3 \pm 5.27\%$ ) and the 4<sup>th</sup> year ( $56.3 \pm 5.55\%$ ) ( $t = 3.0067$ ,  $p < 0.01$ ); the rate of those practicing the internship in the medical institutions of Chisinau Municipality, declines from

66.7 ± 5.27% (in the 1<sup>st</sup> year) to 12.5 ± 3.69% (the 4<sup>th</sup> year) (t = 8.4199, p < 0.001).

Analyzing the data from the questionnaires, one concludes that the majority of participants, independently of the year of study, prefer the tuition at the medical institutions of Chisinau Municipality to the one at the district-level institutions. The resulted situation can be qualified as a “scissors phenomenon”: the further one advances in the residency period, the more rises the positive consideration of the district-level institutions (the 1<sup>st</sup> year – 7.40 ± 2.85%, the 4<sup>th</sup> year – 25.0 ± 4.84%, t = 3.2033, p < 0.01) and vice versa for the municipality-level medical institutions (the 1<sup>st</sup> year – 92.6 ± 2.93%, the 4<sup>th</sup> year – 75.0 ± 4.84%, t = 3.1111, p < 0.01) (fig. 4).

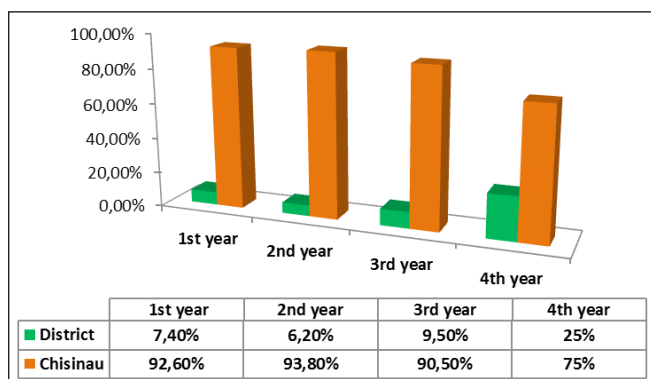


Fig. 4. The evaluation of the participants on quality of studies in correlation with the location of the medical institutions (%).

When asked to evaluate the main cause for choosing the obstetrician-gynecologist carrier, residents of all 4 groups of participants mentioned the humanity asset of this profession (96.3%; 87.4%; 90.4% and 62.4% as it follows ) and only few ones spoke of other reasons and motivations like: family tradition (6.3% – the 4<sup>th</sup>), need of becoming a specialist (6.3% – the 2<sup>nd</sup>; 12.5% – the 4<sup>th</sup>), advice of the relatives (6.3% – the 2<sup>nd</sup>; 4.8% – the 3<sup>rd</sup>; 12.5% – the 4<sup>th</sup>), random choice (3.7% – the 1<sup>st</sup>; 4.8% – the 3<sup>rd</sup>; 6.3% – the 4<sup>th</sup>) (fig. 5).

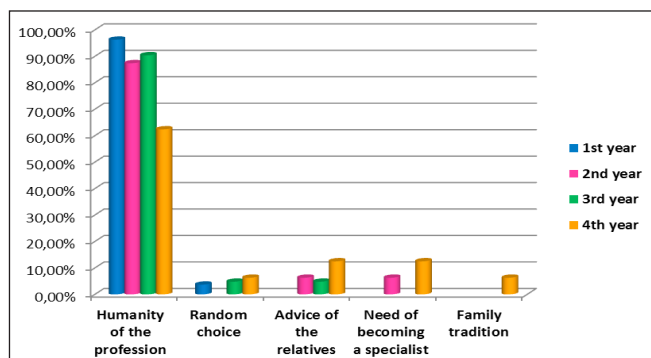


Fig. 5. Reasons for choosing the obstetrician-gynecologist career, according to the answers of the participants (%).

The majority of participants (84.1 ± 4.09%) do not regret choosing this profession. But the rate of those eventually regretting the choice tends to increase, starting from the 1<sup>st</sup> year (3.7 ± 2.11%) until the 4<sup>th</sup> year (18.8 ± 4.37%) (t = 3.1125, p < 0.01), with the highest rate for residents in their 3<sup>rd</sup> year of study (28.6 ± 5.05%) (fig. 6).

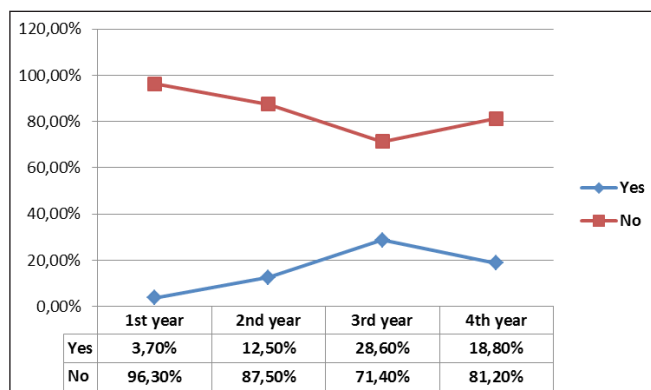


Fig. 6. Participants confessing regret for choosing the obstetrician-gynecologist profession in correlation with the year of residency (%).

The participants in the study stated explicitly the causes for regretting studying the obstetrician-gynecologist profession. It must be mentioned that these causes have high rates which have been prioritized as follows: on the first place is the difficulty of assuring a decent life standard (r<sub>n</sub> = 0.958), on the second place are the long and irregular hours of work, especially at night shifts (r<sub>n</sub> = 0.929), on the third place are the causes related to personal health disturbances (r<sub>n</sub> = 0.913), and on the fourth place are the highly stressed situations encountered in the professional activity (r<sub>n</sub> = 0.845) (table 1).

Table 1

Main reasons for regretting the chosen career in opinion of residents of obstetrics and gynecology

	Abs.	λ	rn	Place
At this moment I am not able to assure a decent living	9	11.3	0.958	I
Psychological difficulties (stressful situations)	2	2.5	0.845	IV
Physical overload (especially the night duty)	5	6.3	0.929	II
Risks for personal health	4	5.0	0.913	III

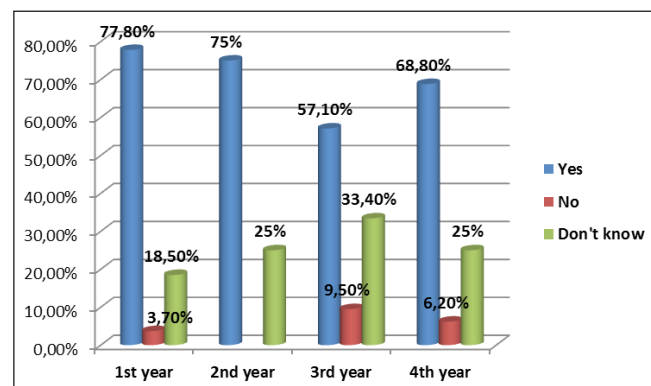


Fig. 7. The residents that would choose to study obstetrics and gynecology again, if they had the chance to.

Approximately 70.0% of the respondents confirmed that they would choose the same career if they got to choose again. Among them, the highest rate of 77.8 ± 4.65% is represented by the residents in the 1<sup>st</sup> year of study and the lowest, of 57.1

± 5.53%, by the residents in the 3<sup>rd</sup> year ( $t = 2.8648, p < 0.01$ ). However every 4<sup>th</sup> participant was not able to give a concrete answer, most of them – residents of the 3<sup>rd</sup> year ( $33.4 \pm 5.27\%$ ). A categorical negative answer came from an average of  $6.5 \pm 2.76\%$  residents participating in the questionnaire, the highest rate of  $9.5 \pm 3.28\%$  being observed by the residents in the 3<sup>rd</sup> year (fig. 7).

The participants specified as well other difficulties they encounter during the time of their residency. Every 3<sup>rd</sup> resident in the 2<sup>nd</sup> and 4<sup>th</sup> year of study ( $31.3 \pm 5.18\%$ ), identified their lack of knowledge as an obstacle. Another difficulty is related to the lack of experience and some curious questions arise from this problem, according to the year of residence. When  $81.5 \pm 4.34\%$  of the participants in the 1<sup>st</sup> year encounter this problem, there is, however, a simple explanation to that – they are at the beginning of their path, but if residents in the 3<sup>rd</sup> year ( $85.7 \pm 3.91\%$ ) and the 4<sup>th</sup> year ( $62.5 \pm 5.41\%$ ) complain of insufficient practical experience, the situation becomes confusing. The third problem pointed out by the participants has to deal with the relationships between residents and physicians; average rate amounts  $30.5 \pm 5.15\%$ , with the highest rate of  $43.8 \pm 5.55\%$  for the residents in the 4<sup>th</sup> year and the lowest rate of  $18.5 \pm 4.34\%$  for residents in their 1<sup>st</sup> year of study. Each third resident in the 4<sup>th</sup> year of tuition answered that they encountered no difficulties ( $31.3 \pm 5.18\%$ ) (fig. 8).

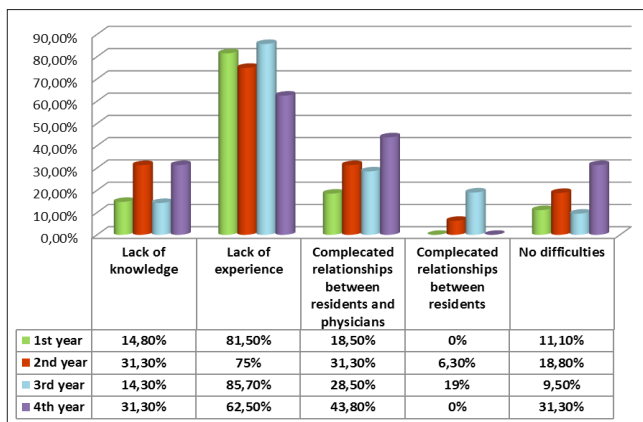


Fig. 8. Difficulties residents encounter during their residency in the obstetrics and gynecology field.

The residents in the 4<sup>th</sup> year of tuition are 1.7 times more likely to assess the theoretical preparation of residency as *insufficient* to function independently in a medical institution ( $62.5 \pm 5.41\%$ ) rather than *satisfactory* ( $37.5 \pm 5.41\%$ ) ( $t = 3.2659, p < 0.01$ ). Among residents in the 3<sup>rd</sup> year, the same situation has a rate that is 1.8 times higher: *insufficient* ( $52.4 \pm 5.58\%$ ), *satisfactory* ( $28.6 \pm 5.05\%$ ) ( $t = 3.1606, p < 0.01$ ). Every second participant ( $50.0 \pm 5.59\%$ ), in his/her 2<sup>nd</sup> year of residency, considers that the practical provided preparation, in order to perform an independent activity in the future, is adequate enough. Each second participant ( $55.6 \pm 5.55\%$ ), in his/her 1<sup>st</sup> year of residency couldn't select the adequate answer to the question. Figure 9 illustrates all the possible given answers.

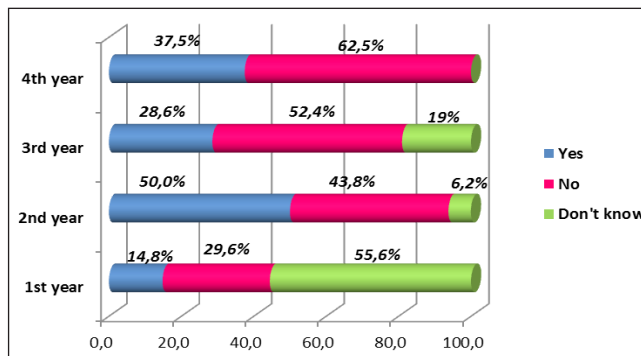


Fig. 9. Evaluation of the quality of the theoretical preparation during residency, regarding the opinion of the residents (%).

The answers provided by the participants evoked alarming results, considering the practical preparation during the residency. Every second respondent in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year of residency ( $43.8 \pm 5.54\%$  in the 2<sup>nd</sup>, 3<sup>rd</sup> and  $56.3 \pm 5.55\%$  in the 4<sup>th</sup> year) finds the practical preparation incomplete for an independent future activity as a physician. Up to 20.0% of residents in the 2<sup>nd</sup>, 3<sup>rd</sup> year of study have selected the “don't know” answer to this question ( $18.8 \pm 4.37\%$ ) (fig. 10).

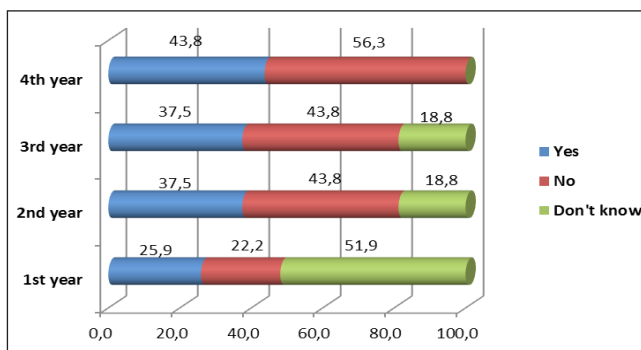


Fig. 10. Estimation of the quality of practical preparation of students during residency regarding the opinion of the residents (%).

The situation regarding the tuition of medical specialists during their residency turns out to be pessimistic as long as the “lack of motivation and the incertitude for the future” constitutes an average of  $55.3 \pm 5.56\%$ , with the highest rate for the residents in the 2<sup>nd</sup> year of tuition ( $67.0 \pm 5.26\%$ ) and the lowest rate for those studying in the 1<sup>st</sup> year of residency ( $46.0 \pm 5.57\%$ ). Lack of confidence in one's own abilities is characteristic for  $10.5 \pm 3.43\%$  of the residents, with more detailed classification depending on the year of studying: the 1<sup>st</sup> year –  $4.0 \pm 2.19\%$ , the 2<sup>nd</sup> year –  $17.0 \pm 4.19\%$ , the 3<sup>rd</sup> year –  $16.0 \pm 4.09\%$  and the 4<sup>th</sup> year –  $5.0 \pm 2.44\%$ .

The residents have selected the following strengths of the educational system, concerning the residency programs: management of theoretical seminars, involvement in practical activities, and positive attitude of the medical staff. A great number of participants picked out the “involvement in practical activities” answer, with an average rate of  $90.5 \pm 3.28\%$ . This statistics is almost equal for all residency periods. Every second participant, studying in the 2<sup>nd</sup> and 4<sup>th</sup> year ( $52.3 \pm 5.58\%$ ), considers that the program's strength relies on the theoretical seminars and among the participants studying in



the 1<sup>st</sup> and 3<sup>rd</sup> year only 31.6 ± 5.19% (t = 2.7133, p < 0.01). The positive attitude of the medical staff towards the residents is however decreasing: for the students attending the 1<sup>st</sup> and the 2<sup>nd</sup> years of residency the rate is 43.0 ± 5.54%, comparing to those attending years the 3<sup>rd</sup> and the 4<sup>th</sup> 11.0 ± 3.49% (t = 4.8871, p < 0.001). The participants that expressed the need for a new-elaborated and simplified program for the residency period constitute an average of 13.2 ± 3.78% (fig. 11).

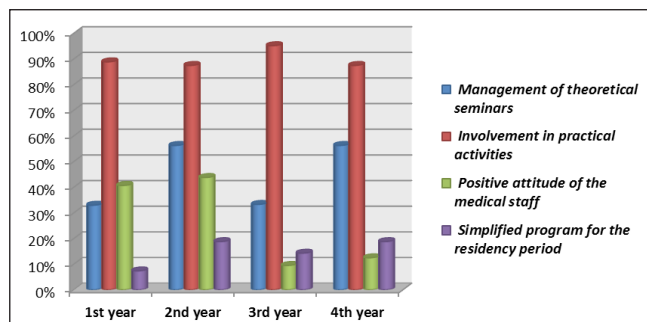


Fig. 11. Strengths of the educational system, concerning the residency programs, regarding the answers of the participants in the questionnaire (%).

An average of 43.0 ± 5.54% respondents, attending the 1<sup>st</sup> year of study, believe that 3.5 years is a sufficient time for the duration of residency in order to become a qualified medical specialist in the field; the participants attending the 2<sup>nd</sup> year of study – 4 years (61.0 ± 5.45%); the residents attending the 3<sup>rd</sup> year of study – 3 years (48.0 ± 5.59%); the residents in their last year of tuition think that 2 years of residency would be sufficient (42.0 ± 5.52%).

Attitude of the participants towards an eventual proceeding to the doctoral – high level studies appears to be positive for the average of 69.0 ± 5.17%, with the highest rate among residents in the 4<sup>th</sup> year (87.5 ± 3.69%) and the lowest rate (56.3 ± 5.55%) among participants in the 2<sup>nd</sup> year of their studies.

Only residents in the 2<sup>nd</sup> year (12.5 ± 3.69%) and 3<sup>rd</sup> year (28.6 ± 5.05%) of residency do not express interest in scientific researches. Figure 12 illustrates all the possible given answers.

During the process of questionnaire we analyzed with an increased interest the future orientation of the residents regarding their professional activity. Consequently we structured the data as it follows: participants that prefer to work further in Chisinau Municipality (63.5 ± 5.38%) regarding their year of residency, have the highest rate for residents in the 1<sup>st</sup> year – 77.8 ± 4.65% and in the 4<sup>th</sup> year – a percentage of 56.3 ± 5.54% has been registered. No participants in the 3<sup>rd</sup> year of residency opted to continue their carrier in district-level medical institutions, while for residents in the 2<sup>nd</sup>

and 4<sup>th</sup> years, 6.3 ± 2.72% of students would work in district-level institutions. Every second participant in the 2<sup>nd</sup> year of residency is planning to work as a medical specialist abroad (50.0 ± 5.59%), following every third participant in the 4<sup>th</sup> year (37.4 ± 5.41%) and every fifth resident in the 3<sup>rd</sup> year (24.0 ± 4.77%), this summarizing makes up an average of 30.6 ± 5.15% of the residents (table 2).

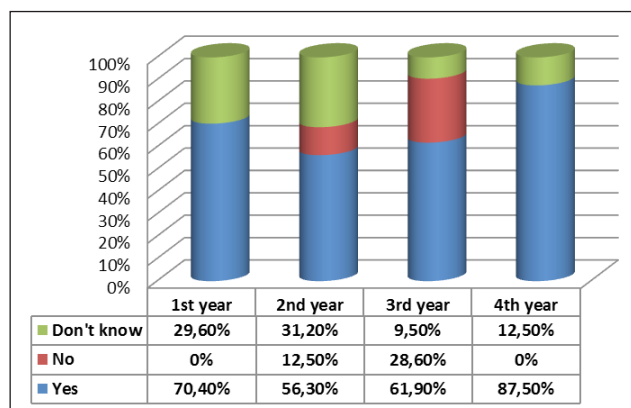


Fig. 12. Interest in proceeding to doctoral studies, according to the year of residency (%).

Aspects and factors that have caused the lack of eagerness when it comes to working in district-level medical institutions, which are in urgent need of medical specialists, arises interest for a thorough research. Residents of the 4<sup>th</sup> year, in 80.0 ± 4.47% of cases pointed on the lack of broad opportunities for carrier growth, followed by the inferiority of medical equipment at the district-level medical institutions and the low earnings (58.0 ± 5.52%); 54.0 ± 5.57% of the respondents emphasized the absence of living conditions and (42.0 ± 5.51%) the unemployment of the husband/wife. The answers provided by the residents between the 2<sup>nd</sup> and the 4<sup>th</sup> years of tuition have the equal hierarchy, but lower rates, which are represented in figure 13.

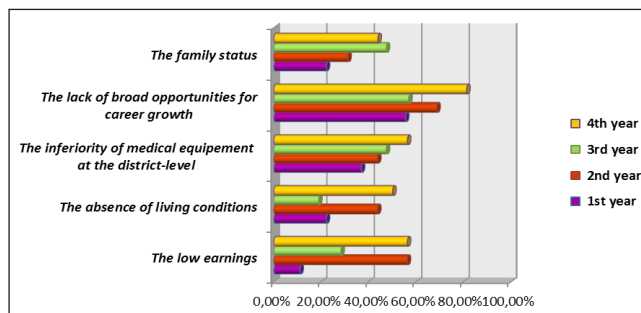


Fig. 13. Main factors that have caused the reluctance towards working in district-level medical institutions in the opinion of respondents (%).

Table 2

Future plans and orientation of the participants regarding their professional activity (%)

	1st year	2nd year	3rd year	4th year	χ2, gl, p
In Chisinau	77.8±4.65	43.7±5.55	76.0±4.77	56.3±5.54	21.7 gl=3.0 p<0.001
In the district-level medical institutions	11.1±3.51	6.3±2.72	0.0±0.00	6.3±2.72	6.2 gl=3.0 p>0.05
Abroad	11.1±3.51	50.0±5.59	24.0±4.77	37.4±5.41	18.2 gl=3.0 p<0.001

### Conclusions

The career prospects of the residents in the public health system are highly insufficient and the employments in the rural areas are not enough attractive. As a consequence, it makes it challenging to assure an even repartition of young specialists in the obstetrics and gynecology field, in the most of the country's districts.

Most of the young specialists that have received a professional training, which relies in considerable amounts on public financial resources, do not want to be employed in district-level medical institutions, in spite of the fact that these institutions are in urgent need of medical specialists. This is a difficult situation which can cause major problems in providing medical assistance to the citizens. The reduced possibilities of administrating highly qualified medical assistance will eventually increase the maternal and prenatal mortality.

The health system in the Republic of Moldova lacks good functioning methodology in plan development, monitoring and controlling of human resources. The system confronts the absence of a realistic motivation for the medical specialists and the existing professional preparation demonstrates insufficiency.

All of the mentioned above implies some reorganizational proceedings in the tuition system of medical specialists as well as in the management of medical staff. It requires the implementation of special methodologies in planning and foreseeing the evolution of medical staff availability, in correlation with the socio-economic development of the country. Creating a multidimensional system of monitoring the medical staff, would allow controlling the professional development of medical specialists in the fields which will allow a prolific

activity of the health system and a good operating assistance of the Mother and Child healthcare department.

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