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The level of mastering theoretical knowledge assessment among female students while studying specialized physical culture module

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Abstract: The relevance of the research is determined by the fact that «Physical culture» discipline study is based on "Motor culture of a personality in order to prepare for pregnancy" module. It included practical part with 18 units of physical exercises complexes and theoretical part with 16 topics of lecture course. The assessment of the theoretical knowledge mastering level among female students is realized in the following way: students study the theoretical and practical parts of "Motor culture of a personality in order to prepare for pregnancy" module and there is practical motor skills formation and theoretical knowledge mastering connected with body training for pregnancy, bearing healthy children, successful delivery and body recovery after childbirth. The research was carried out in order to compare the level of female students' theoretical knowledge. They studied specialized educational module "Motor culture of a personality in order to prepare for pregnancy" with the level of theoretical knowledge of female students. They had a traditional physical culture program. ***Research methods.*** We used the following research methods: specific pedagogical – theoretical (scientific and methodological literature, archival materials and documents analysis and summarizing, projection and modeling), empirical methods (observation, conversation); methods of studying the products of students' activity, educational documentation; methods of measurement and control (testing), pedagogical experiment, mathematical and statistical methods. ***Results.*** The research presents comparative results of theoretical knowledge level in female students from control groups. They studied according to the traditional "Physical culture" program. And the female students from the experimental groups. They studied innovative specialized "Motor culture of a personality in order to prepare for pregnancy" module. ***Conclusion.*** Analyzing the results of mastering theoretical knowledge we came to the following conclusion: female students from the EG-1, the EG-2 and the EG-3, who studied lecture course of the theoretical part of the specialized "Motor culture of a personality in order to prepare for pregnancy" theoretical part module in terms of educational discipline "Physical culture", had higher theoretical knowledge level, than among the female students from the CG-1, the CG-2 and the CG-3. The received results show that the created lecture course is necessary for all students without any exception, as studying it female students, would be able to get necessary theoretical knowledge in order to prepare organism for pregnancy, bearing healthy children, successful delivery and body recovery after childbirth and would help to master theoretical knowledge for their preparation for childbirth.

Keywords: theoretical knowledge, specialized module, physical culture, female students, lecture course, MOODLE platform.

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Introduction

The relevance of the research is determined by the fact that «Physical culture» discipline study is based on "Motor culture of a personality in order to prepare for pregnancy" module. It included practical part with 18 units of physical exercises complexes and theoretical part with 16 topics of lecture course [1]. The assessment of the mastering theoretical knowledge level among female students is realized in the following way: students study the theoretical and practical parts of "Motor culture of a personality in order to prepare for pregnancy" module and there is practical motor skills formation and theoretical knowledge mastering connected with body training for pregnancy, bearing healthy children, successful delivery and body recovery

after childbirth [2]. The research was carried out in order to compare the level of female students' theoretical knowledge. They studied specialized educational module "Motor culture of a personality in order to prepare for pregnancy" with the level of female students' theoretical knowledge. They had a traditional physical culture program.

Materials and methods

Pedagogical research work was carried out on the basis of educational establishment "Vitebsk State University named after P.M. Masherov" (the Republic of Belarus) while studying "Physical culture" discipline in a form of a specialized educational module "Motor culture of a personality in order to prepare for pregnancy" (adopted July, 23, 2020, registration № UD-27-004/uch.) [1]. The lessons (duration 1 hour 20 minutes) were organized according to the set schedule twice a week. The program study was for 280 academic hours, 64 of them were given for theoretical training and 216 hours for practical training during the academic year. The forms of interim attestation were the tests, current attestation – credit. The presented educational module is the component of higher educational establishment. The program of lessons was created taking into consideration the demands of the third generation educational standard.

121 female students from the experimental groups took part in the research: 40 female students of the main medical group (EG-1), 41 female students of the preparatory medical group (EG-2) and 40 female students of special medical group (EG-3). We also formed three control groups (119 female students): 39 female students of the main medical group (CG-1), 40 female students of the preparatory group (CG-2) and 40 female students of special medical group (CG-3).

Female students from the CG studied according to the traditional "Physical culture" program for higher educational establishments (June, 26, 2017 registration № TD-SG. 025 / tip.) [3]. Students from the EG studied according to innovative specialized educational module "Motor culture of a personality in order to prepare for pregnancy" [4,5] in terms of "Physical culture" discipline. The level of theoretical knowledge assessment was realized at the beginning and the end of autumn and spring semesters 2020-2021.

Results and Discussion

The created innovative specialized module "Motor culture of a personality in order to prepare for pregnancy" in terms of "Physical culture" educational discipline, presented at Vitebsk State University named after P.M. Masherov" is used in the following way.

The students of higher educational establishment, who are from the main medical group (EG-1, CG-1), preparatory medical group (EG-2, CG-2) and special medical group (EG-3, CG-3), during "Motor culture of a personality in order to prepare for pregnancy" module realization in terms of "Physical culture" discipline form motor skills during 18 units of physical exercises complexes of the practical part realization, master the knowledge during 16 topics of lecture course mastering.

The units of physical exercises complexes include the following: respiratory exercises, exercises for neck and head, hand muscles strengthening; physical exercises for shoulder girdle, chest, spine, abdomen and body muscles strengthening; physical exercises for coordination development, for hip joint, small pelvis, legs muscles, hamstring and ankle joint strengthening; physical exercises for relaxation and muscle relaxation, exercises on fitball and physical exercises for the 1st, 2nd and the 3rd trimesters of pregnancy and the exercises for rehabilitation after pregnancy and delivery [6,7].

At the same time, the form of practical part control includes the following:

– the level of physical readiness assessment during the standing long-jump fulfillment, lean forward, dip up, body lifting from back posture within 60 seconds, shuttle run 4x9 m, 1500 meters running;

– the level of physical development assessment during anthropometric indices diagnostics: body length (BL), body weight (BW), chest circumference (CC), vital capacity (VC), hands dynamometry (R/H- right hand and L/H-left hand) and physiometric indices: arterial pressure (AP) – SBP (systolic blood pressure), DBP (diastolic blood pressure), heart rate (HR), respiration rate (RR);

– the level of physical health assessment during the exercises fulfillment, which condition Quetelet index, birth-death ratio, Stenia index, hand index, Robinson index;

– spine health assessment during tests fulfillment in order to define cervical and lumbosacral osteochondrosis;

–health index assessment, which is calculated according to the following formula:

K=a/b*100% , where *K* – health index (в %), *a* – amount of students, who were never ill during the year, *b* – general list of the group;

– the level of psychophysical status assessment during the test of social-psychological adaptation diagnostics fulfillment (C. Rogers and R. Dymond), stress resistance self-assessment test (S. Cohen and G. Williamson), attention test according to tables by Shulte.

The form of the theoretical part control includes tests fulfillment in modular-rating system in a form of testing tasks.

The presented specialized module "Motor culture of a personality in order to prepare for pregnancy" was created for the students at higher educational establishments in order to prepare them for childbirth. The presented module can be used during elective course of lessons according to "Physical culture" discipline for the female students. They study at the specialties of non-sport profile of the 1st step of higher education, starting from the 3rd course, no less than two academic hours a week.

The article presents the results connected with the level of theoretical knowledge among female students of the main, preparatory and special medical department during theoretical part study of the specialized educational module "Motor culture of a personality in order to prepare for pregnancy" in terms of educational discipline "Physical culture".

The form of the theoretical part control includes tests fulfillment in modular-rating system in a form of testing tasks (400 questions). These questions can be found on MOODLE platform of the University site SDO.VSU.BY. Female students of the control and experimental groups fulfilled tests at the beginning and the end of the term. Lecture course was only in the experimental groups. Picture 1 presents the content of the theoretical part of the specialized module.

The modular principle use helped female students of the EG-1, the EG-2 and the EG-3 master theoretical knowledge in order to prepare organism for pregnancy, healthy children bearing, successful delivery and body recovery after childbirth. As the presented course was organized in terms of the pedagogical experiment, special attention was paid to the created test. Ttheir results showed the level of mastering the topic of the theoretical part of the presented module of "Physical culture" discipline. The results of the test were automatically handled. We had not only the final results, but also the statistics concerning the separate tasks fulfillment.

The results of the tasks, presented by table 1, prove sufficiently high level of theoretical readiness among the female students of the EG-1,the EG-2 and the EG-3. The lowest percentage of the tasks fulfillment was among the representatives of EG-1 (the main medical group). It was 88,06±0,43 according to test №10 "Naturally scientific basis of motor culture during pregnancy period".The highest was (99,65±0,02) according to test №14 "Model complexes of physical exercises for pregnant women taking into account chronic diseases, professional activity and trimester of pregnancy".

In the EG-2 (preparatory medical group) the average group smallest percentage was after test №6 "Pedagogical control over physical health of women during pregnancy period". It was 88,31±1,55. The highest percentage (99,00±0,54) was according to test №14 "Model complexes of physical exercises for pregnant women taking into account chronic diseases, professional activity and trimester of pregnancy", the same as in the EG -1.

As a result of the EG-3 data analysis (special medical group), we revealed that the smallest percentage (89,09±0,50) of theoretical knowledge assessment was after test №5 "The influence of modern health-improving systems on a woman's organism before impregnation, during pregnancy and after childbirth. The highest result (99,65±0,37) female students received after test №2 "Motor culture before impregnation, during pregnancy and after delivery".

The level of theoretical knowledge assessment in the CG-1, pictures 2,3, showed that

the female students don't have sufficient level of theoretical knowledge without lecture course mastering, as the highest percentage was 8,98±0,70 according to test №14 "Model complexes of physical exercises for pregnant women taking into account chronic diseases, professional activity and trimester of pregnancy".

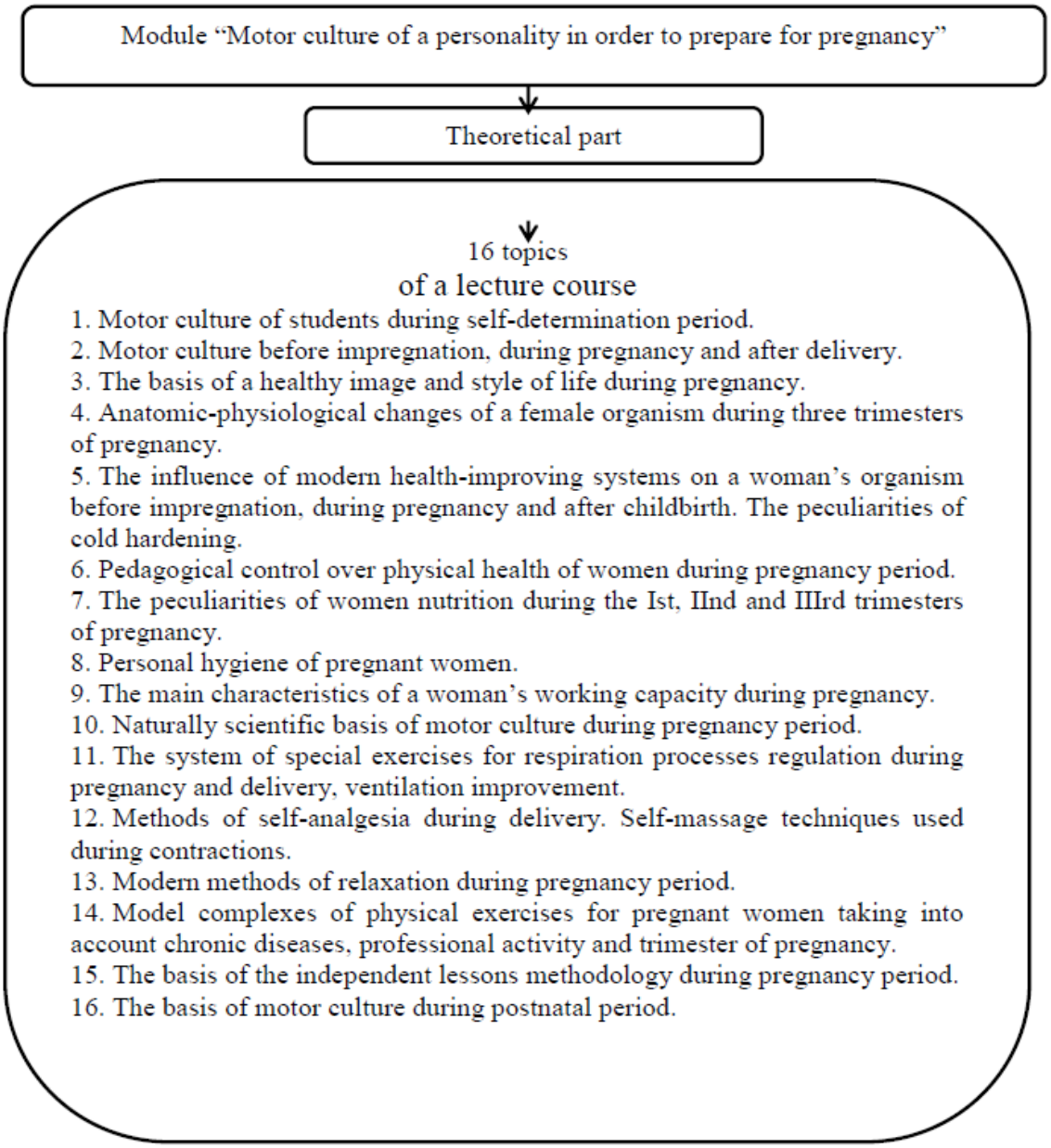

Fig. 1. The content of the theoretical part of the specialized module "Motor culture of a personality in order to prepare for pregnancy"

Table 1

The level of theoretical module mastering assessment among female students of the main, preparatory and special medical groups

TESTS	CG-1 (n=39)	EG-1 (n=40)	CG-2 (n=41)	EG-2 (n=39)	CG-3 (n=40)	EG-3 (n=40)
	at the beginning	at the beginning	at the beginning	at the beginning	at the beginning	at the beginning
	at the end	at the end	at the end	at the end	at the end	at the end
Test №1	6,45±0,21	7,56±0,45	3,70±0,76	4,87±1,76	4,09±0,36	3,76±1,32
	5,98±0,76	94,34±0,29	3,69±0,43	97,90±0,32	5,21±1,76	93,38±0,39
Test №2	4,97±0,01	4,81±0,12	6,29±0,38	8,21±0,65	8,44±0,33	9,65±0,13
	5,95±0,76	92,49±0,58	7,99±1,44	90,03±0,50	5,78±0,43	97,00±0,54

Test №3	5,98±1,94	2,69±0,52	5,80±0,4	2,69±1,89	6,22±0,12	7,37±1,48
	6,73±0,39	89,04±0,27	4,32±0,48	90,03±0,88	4,76±0,38	91,04±0,40
Test №4	3,85±1,76	5,79±0,65	7,22±0,63	7,51±0,28	7,99±0,34	7,40±1,60
	4,87±1,49	98,08±0,11	6,39±0,21	91,09±0,17	5,95±1,62	95,04±1,30
Test №5	2,67±0,56	5,84±0,42	6,84±1,65	5,87±0,54	6,09±1,50	8,94±1,69
	4,76±0,45	90,06±0,56	6,98±0,48	93,03±0,57	7,09±0,65	90,87±0,67
Test №6	8,96±1,22	8,64±0,43	6,96±0.59	4,81±2,69	6,89±0,54	8,63±0,32
	7,03±0,29	90,04±1,40	4,78±1,11	89,07±0,56	7,43±0,98	97,65±1,47
Test №7	6,74±0,52	4,87±0,45	3,76±0,49	5,78±0,56	7,09±1,78	5,29±1,70
	7,54±083	89,08±1,65	5,01±0,56	94,00±2,67	7,98±2,84	94,07±2,65
Test №8	3,98±1,87	2,82±1,75	4,22±2,71	4,07±0,50	5,39±0,90	4,87±0,98
	3,91±1,39	90,00±2,03	3,97±0,65	91,09±013	4,87±0,98	94,76±0,68
Test №9	2,87±0,69	4,89±0,54	5,76±0,83	5,87±0,82	5,87±0,69	5,98±0,78
	3,76±0,67	90,00±0,14	4,76±0,32	98,09±0,67	4,32±0,99	92,09±0,58
Test №10	1,87±0,87	2,65±0,59	4,98±0,56	2,79±0,65	4,87±0,13	4,87±0,49
	2,56±0,65	89,05±0,54	4,08±0,32	95,00±0,65	3,72±0,39	97,00±0,59
Test №11	8,00±0,65	4,97±0,76	4,87±0,67	7,65±0,40	7,34±0,98	8,37±0,69
	6,59±0,58	89,00±0,47	4,29±0,51	95,07±0,65	6,96±0,75	94,00±0,63
Test №12	7,09±0,64	5,87±0,58	5,96±0,15	6,98±0,77	4,89±0,55	5,98±0,39
	5,87±0,65	92,06±0,74	3,57±0,33	98,05±0,55	5,04±0,88	90,07±0,64
Test №13	2,67±0,76	4,86±0,60	4,76±0,59	4,87±0,70	3,19±0,05	5,25±0,51
	3,98±0,79	92,98±0,69	3,95±0,79	91,01±0,61	4,29±0,26	89,03±0,56
Test №14	8,98±0,70	5,89±0,42	7,39±0,54	2,65±0,76	7,79±0,60	3,67±0,65
	6,39±0,49	99,65±0,02	6,39±0,65	99,00±0,54	5,28±0,12	98,08±0,67
Test №15	5,44±0,67	5,87±0,77	2,79±0,65	3,98±0,69	4,39±0,49	4,99±0,38
	4,84±0,29	90,00±0,66	3,87±0,40	90,00±0,69	4,98±0,78	89,48±0,69
Test №16	7,65±0,98	7,54±0,69	4,87±0,68	5,78±0,49	3,87±0,79	5,89±0,45
	7,67±0,58	93,87±0,57	5,87±0,59	94,09±0,69	5,89±0,43	91,89±0,67

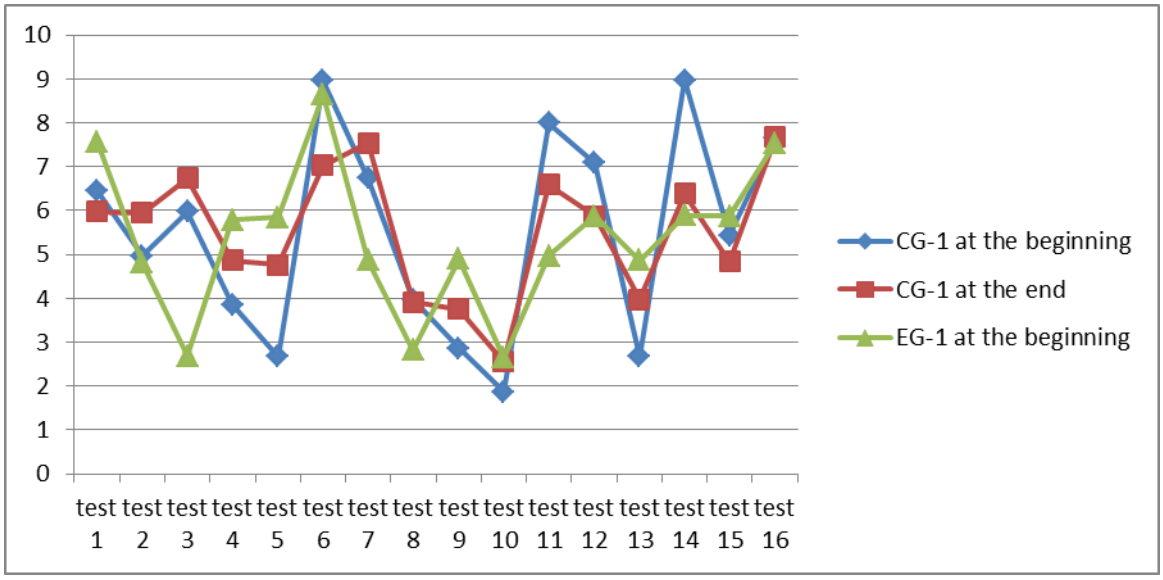

Fig. 2. The level of theoretical knowledge among female students of CG-1 and EG-1 of the main medical department before specialized module studying

The received results prove that this test was easier for the female students of the CG-1 and the EG-2 and the EG-3 in comparison with other tests.

In the CG-1, as pictures 4,5 present, the best result (7,99±1,44) was received by female students according to test №2 “Motor culture before impregnation, during pregnancy and after delivery”. The highest result was also in the EG-3 in test №2.

Fig. 3. The level of theoretical knowledge among female students of the CG-1 and the EG-1 of the main medical department after specialized module studying

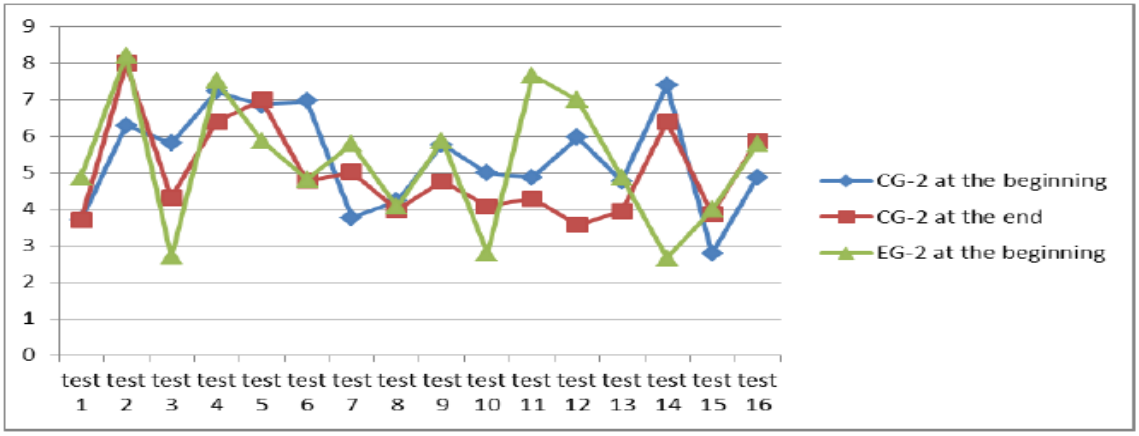

Fig. 4. The level of theoretical knowledge among female students of the CG-2 and the EG-2 of the preparatory medical department before specialized module studying

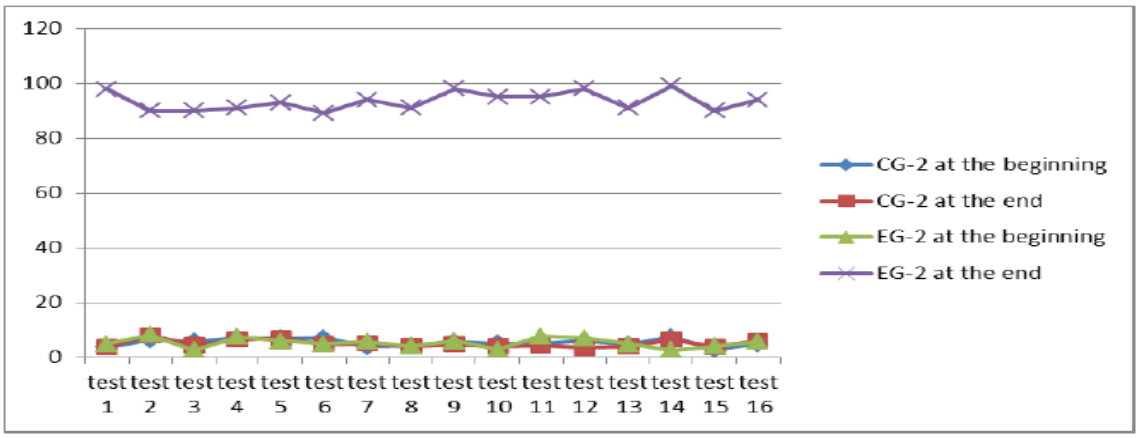

Fig. 5. The level of theoretical knowledge among female students of the CG-2 and the EG-2 of the preparatory medical department after specialized module studying

In the CG-3 the best result students showed after test №2 – 8,44±0,33 (Fig. 6,7).

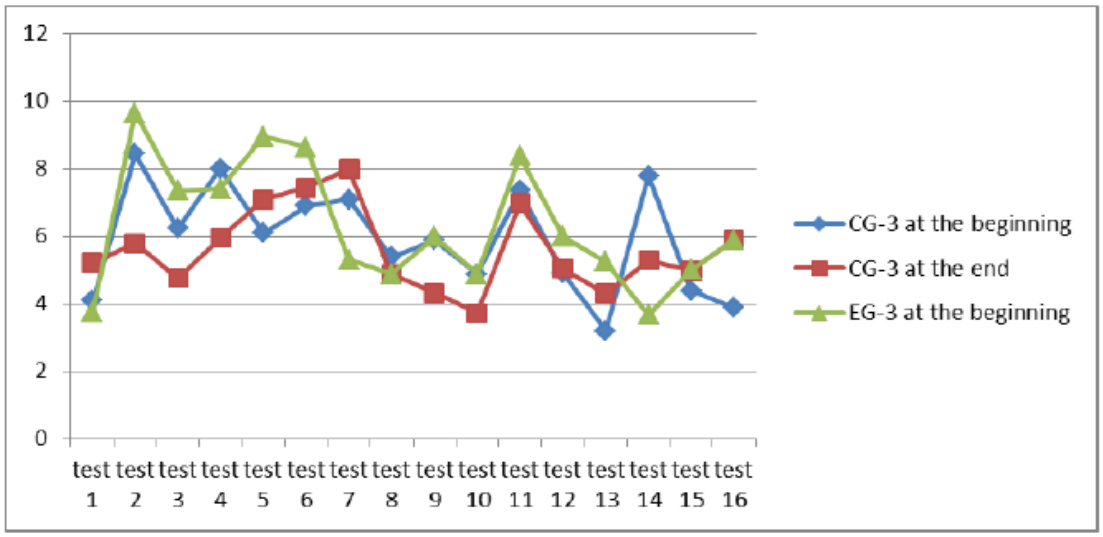

Fig. 6. The level of theoretical knowledge among female students of the CG-3 and the EG-3 of the preparatory medical department before specialized module studying

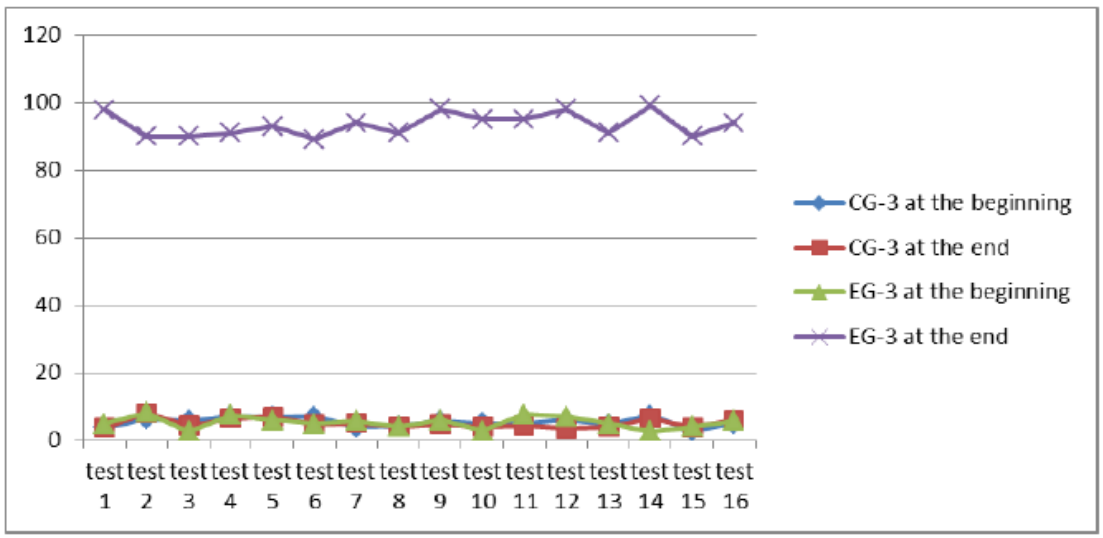

Fig. 7. The level of theoretical knowledge among female students of the CG-3 and the EG-3 of the special medical department after specialized module studying

Conclusion

Thus, the results of the theoretical knowledge analysis, showed that among female students of the EG-1, the EG-2 and the EG-3, who studied lecture course of the theoretical part of the specialized module "Motor culture of a personality in order to prepare for pregnancy" in terms of "Physical culture" discipline, the level of theoretical knowledge is higher, than among female students of the CG-1,the CG-2 and the CG-3. The received results show that the created lecture course is necessary for all students without any exception. Studying it female students would be able to get necessary theoretical knowledge in order to prepare organism for pregnancy, bearing healthy children, successful delivery and body recovery after childbirth and would help to master theoretical knowledge for their preparation for childbirth.

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