

INVESTMENTS IN SCIENTIFIC TEACHING STAFF – MAIN DETERMINANT OF QUALITY MEDICAL EDUCATION

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Abstract. *Science has emerged as a powerful tool to facilitate researchers in conducting trustful summary of achievements in clinical practice. Science has a leading role in modern medicine as it allows prediction of the future development of new scientific ideas, formulating the prospects for future development. The purpose of the article was to make a comparative analysis and evaluation of the allocated funds for scientific and teaching staff hired under second employment contract in the university clinics or accredited teaching hospitals or departments for clinical training of the Medical University – Sofia for the period 2013-2022, and to show the effectiveness of investing in human capital. For the purposes of the research, the following were used: documentary method, analysis and synthesis and comparative method. During the analyzed period, a permanent tendency towards a decrease in the total number of clinical teachers in all clinical training centres was observed. The total amount of funds spent on the wage fund for the ten-year period increased by 35.7% compared to the beginning of the period. The increase in the funds for the salary fund of the clinical teachers stems from the policy that was introduced in 2016 with the Collective Labor Agreement – together with the social partners stimulation (bonus) for theoretical and practical training of medical students both in the Bulgarian language (state order), as well as payment for English language training. With a view to improving the quality of education of future healthcare professionals, MU – Sofia continuously invests its own funds in its scientific and teaching staff. Proof of the effectiveness of the invested funds are the results of the last 10 years of the Rating System of the higher schools in the Republic of Bulgaria, in which MU – Sofia was ranked first in the five professional areas in which it conducts training.*

Key words: *medical education, scientific and teaching staff, clinical bases, spent funds, efficiency.*

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INTRODUCTION

The dynamically developing innovation processes in medical education require the formation of medical personnel to meet the demands of society and the growing health needs of the population. The new priorities of the modern educational strategy and our membership in the European Education Area require new approaches and models in the education of students in medical universities.

Science has emerged as a powerful tool to facilitate researchers in conducting trustful summary of achievements in clinical practice. Moreover, it has a leading role in modern medicine as it allows prediction of the *future development* of new *scientific* ideas.

Medical education is important not only for every medical student because it shapes the qualities of future doctors, but also because it determines the quality of medical care that patients receive.

One of the first researchers of human capital issues was Adam Smith, who as early as the 18th century considered investments in education and upskilling of workers similar to those in the production of a better and more productive machine. For him, a more skilled workforce combined with a better quality machine is a major factor in higher productivity, the costs of their creation being recouped through increased profit and pay [1].

It is necessary to continuously work on improving the payment mechanisms of the scientific and teaching staff in medical schools, which will stimulate and motivate the academic staff to increase their qualifications, thus guaranteeing the effectiveness of the educational process and satisfaction with the results obtained, which will give opportunity for new staff to successfully meet public needs and expectations [3; 4].

TARGET

The purpose of this article was to make a comparative analysis and evaluation of the allocated funds for scientific and teaching staff hired under second employment contract at the university clinics or accredited teaching hospitals for clinical training of the Medical University – Sofia (MU – Sofia) for the period 2013-2022.

TASKS

To achieve this goal, we have set the following tasks:

1. Analysis of the number of clinical teachers assigned to 0.25 position in the clinical training centres of the MU – Sofia for the period 2013-2022.

2. Analysis of the funds spent for the Salary fund (FRZ) by clinical training centres of the MU – Sofia for the period 2013-2022.

MATERIALS AND METHODS

The article presents the results of the analysis of the data related to the funds spent on the scientific and teaching staff hired under second employment contract at clinical training centres of the Medical University – Sofia. For the purposes of the research, we used a documentary method based on the financial and accounting data for the salary fund of the researchers and teaching staff as well as data on purchase of additional tangible assets for teaching and educational activities at the Faculty of Medicine at the Medical University – Sofia for the period 2013-2022. The data used is available at the university's annual financial report, which is public. Permission for their use has also been received from the Management of the Medical University – Sofia. As statistical methods we applied analysis and synthesis and comparative method.

RESULTS

During the analyzed period, as can be seen from the graph, a worrisome permanent tendency towards a shrinking number of clinical teachers at all clinical training centres (the decrease was by 23.5%) was observed. The largest decrease in the total number of clinical teachers was observed in 2016 compared to 2015 – by 46 teachers and in 2020 compared to 2019 – by 29 teachers.

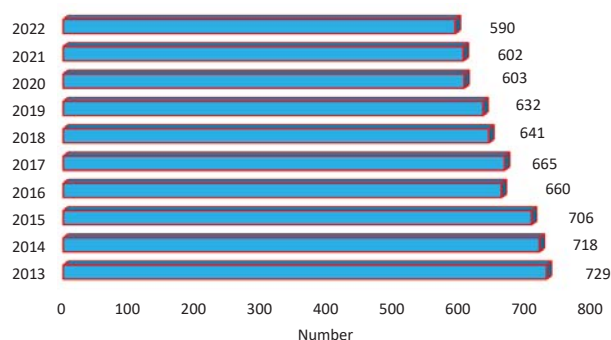


Fig. 1. Total number of clinical teachers assigned to 0.25 position in the clinical training centres of MU – Sofia for the period 2013-2022

Regarding the funds spent for the Salary Fund for the analyzed period 2013-2022 – out of the total funds spent BGN 28 564 818, those for the FRZ (Salary Fund) of UMBAL „Tsaritsa Yoanna – ISUL“ represented 17.43% and occupied second place as a

relative share compared to the remaining 12 clinical training centres of the MU – Sofia. The most funds were spent on UMBAL „Alexandrovska“ – 36.55% of the total amount, UMBAL „Sv. Ivan Rilski“ was on the third place – with 9.69%. The least amount of funds were allocated to MBALSMP „Pirogov“ – 1.36% and SBALIPB „Prof. Ivan Kirov“ – 1.49%.

Table 1. Total spent funds for FRZ (Salary Fund) on clinical training bases of MU – Sofia for the period 2013-2022

Clinical Training Bases	Funds Spent in BGN	% of the total amount of funds spent
UMBAL „Alexandrovska“	10 439 694	36.55
UMBAL „Tsaritsa Yoanna – ISUL“	4 978 440	17.43
USBALE „Akad. Ivan Penchev“	1 113 816	3.90
SBALAG „Maichin dom“	2 005 866	7.02
USBALO „Prof. Boicho Boichev“	860 781	3.01
UMBAL „Sv. Anna“	609 690	2.13
UMBAL „Prof. dr Al. Chirkov“	1 199 148	4.20
UMBAL „Sv. Ivan Rilski“	2 767 365	9.69
UMBALNP „Sv. Naum“	1 184 664	4.15
MBALSMP „Pirogov“	388 467	1.36
SBALDB „Prof. dr Ivan Mitev“	1 471 410	5.15
SBALIPB „Prof. Ivan Kirov“	424 299	1.49
UMBALBB „Sv. Sofia“	1 121 178	3.93
Total Funds Spent	28 564 818	100.00

Annual FRZ (Salary Fund) costs by clinical training bases in 2013 and later on in 2022 are presented in the graphs below:

As can be seen, during the entire period under review, the most funds were spent on UMBAL „Alexandrovska“ (for the ten-year period they increased by 27.2%), UMBAL „Tsaritsa Yoanna – ISUL“ (for the ten-year period they increased by 28.6%) and UMBAL „Sv. Ivan Rilski“ (for the ten-year period they increased more than twice). The least expenses for the annual salary fund were allocated to SBALIPB „Prof. Ivan Kirov“, UMBAL „Sv. Anna“ and MBALSMP „Pirogov“, although we must also take into account the dynamics that have been observed over the years in terms of allocated funds.

The funds spent for the period under consideration were invested according to the number of clinical teachers and the average list number of students who passed through the relevant training base.

The total amount of funds spent for the salary fund for all clinical training bases of the Medical University – Sofia for the ten-year period was BGN 28 564 818. Compared to the beginning of the period, expenses have increased by 35.7%. In 2015 and 2016 a certain decrease in the amount of funds was observed. The largest increase was observed in 2021 compared to 2020 – by BGN 280 512 and in 2022 compared to the previous year – by BGN 241 812.

DISCUSSION

From the charts presented, it can be seen that there was a change regarding the allocated funds for the Salary fund (FRZ) for the clinical training sites of the

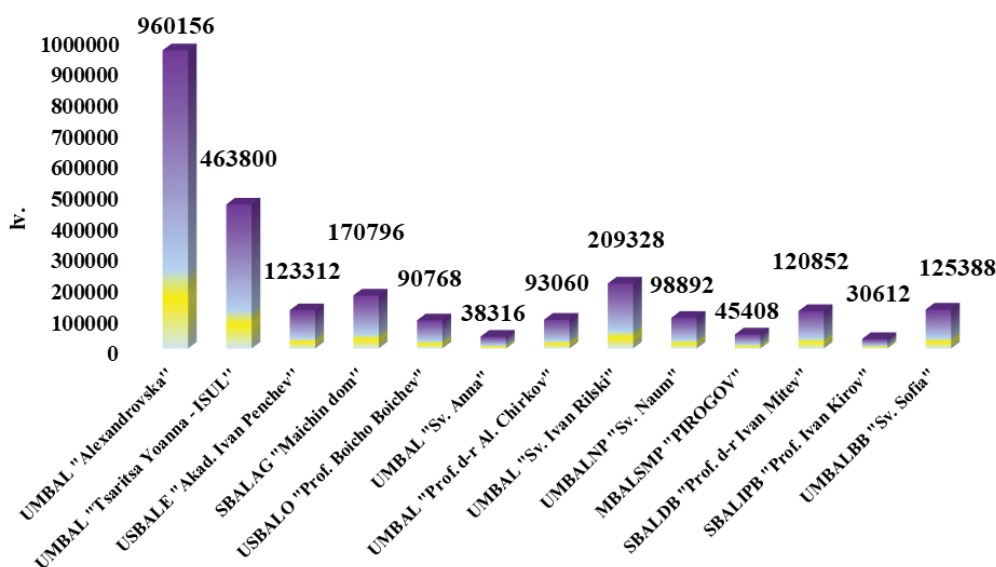


Fig. 2. Expenditures for Annual FRZ (Salary Fund) by clinical training bases in 2013, BGN

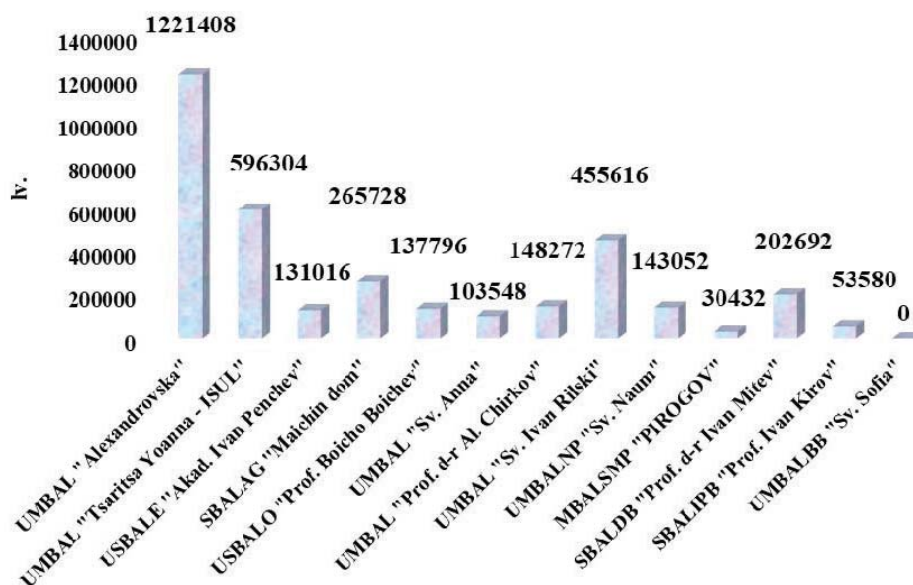


Fig. 3. Expenditures for the Annual FRZ by clinical training bases in 2022, BGN

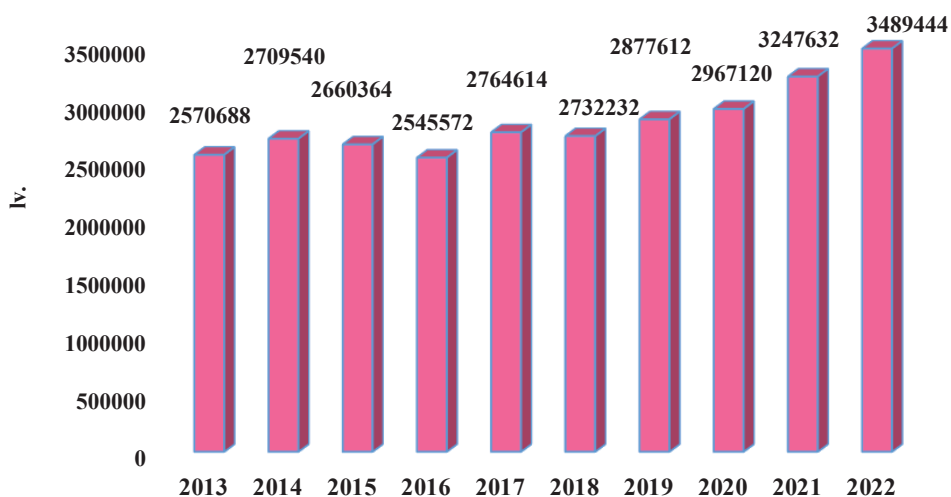


Fig. 4. Funds spent in total for the FRZ (Salary Fund) for the clinical training bases of the MU – Sofia for the period 2013-2022, BGN

Medical University – Sofia, which was a reflection of the change in the number of clinical teachers over the years. In the majority of the university clinics or accredited teaching hospitals and departments, a decrease in the teaching staff was observed. In „Alexandrovska“ UMBAL, for example, in 2013, their number was 275, and at the end of the period in 2022, only 210 were left, i.e. a decrease by 23.6%. In another teaching hospital, UMBAL „Tsaritsa Yoanna – ISUL“ the decrease was by 23.7%. In SBALAG „Maichin dom“ in 2013 there were 49 members of the academic staff, after which a slight increase was observed, but in 2022 their number decreased again compared to the beginning of the analyzed period. UMBAL „Sv.

Ivan Rilski“ had 58 clinical teachers at the beginning of the period, and in 2022 they were 29.3% more [5].

It should be noted that for many years teaching work was repeatedly underestimated compared to other countries, which to a certain extent hindered the qualitative development of higher education and investment in it [2].

Despite the neglect by the state, after the changes in the 90s of the 20th century, of the system of higher education, evident from the analyzed data, MU – Sofia has continuously invested from its own funds in the last 10 years in its scientific and teaching staff, with a view to improving the quality of training of future health personnel. With these investments, MU

– Sofia guarantees the qualitative and quantitative reproduction of the health system of the Republic of Bulgaria, with a view to meeting the health needs of the population of our country. For the last 10 years, MU – Sofia was on the first place in the five professional fields in which the university conducts training, except for the „Health care“ field, where the university was rated second. Thus, we have demonstrated that over the years the number of teachers has decreased, but nevertheless the funds have increased, i.e. that Medical University – Sofia continuously has invested from its own funds in its research and teaching staff, thus motivating them to increase their qualifications and offer quality education to students. In support of this are the results of the rating system of higher education schools in the country.

The role of collective bargaining and the development of industrial relations are a prerequisite for people's continuous pursuit of improvement and development of human capital.

The observed increase in the funds for the FRZ (Salary Fund) of the clinical teachers stems from the policy and the introduction from 2016 with the Collective Labor Agreement (CLA) – together with the social partners, stimulation (bonuses) for theoretical and practical training of medical students both in the Bulgarian language (state contract), as well as payment for training in English. In addition, higher payment is required for overtime hours according to a certain scale and according to the academic position, defined in the Collective Labor Agreement at Medical University – Sofia. In this way – by investing more funds in the academic staff, conditions are created for providing better theoretical and practical training for students of medicine, dentistry and social health care, which has an important socially beneficial contribution to the creation and realization on the labor market of trained medical specialists, as well as for the protection of public health.

CONCLUSION

Investments in human capital are one of the leading economic topics, with key importance for the development of the economy and its competitiveness. The formation of human capital is a complex process, for which many other social and economic spheres are also important. For example, the development of the health system, as well as the systems of prevention, mass sports, tourism, etc. have a direct impact on the health of the population, which is a major component of human capital.

It is imperative that investment in education and the respective stimulation of teachers become a priority policy to bring the education system in line with European norms. This will ensure growth and accumulation of human capital as an important factor for increasing the competitiveness of the economy [2].

It is undeniable that higher education has many more benefits for both the individual and society as a whole.

The authors declare no conflict of interest.

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