

HISTORICAL NOTE

CONTRIBUTIONS OF DOCTORS FROM CROATIA TO THE ESTABLISHMENT AND INITIAL DEVELOPMENT OF THE FACULTY OF MEDICINE IN SKOPJE, REPUBLIC OF MACEDONIA

Polenakovic M,¹ Donev D²

¹*Macedonian Academy of Sciences and Arts, Skopje, R. Macedonia*

²*Institute of Social Medicine, Faculty of Medicine,
Ss Cyril and Methodius University, Skopje, R. Macedonia*

Abstract: *Aim:* To analyse and present the milestone activities and actors, with special emphasis on the contribution of doctors from Croatia in the establishment and initial development of the Faculty of Medicine in Skopje, Macedonia, in the period 1947–60.

Method: A retrospective study based on archive materials and jubilee publiccations of the Faculty of Medicine in Skopje, other relevant sources of information, and a review of the relevant literature.

Results: The Faculty of Medicine in Skopje was founded on March 6, 1947 by a Decree of the Government of the Republic of Macedonia, and the first meeting of the Teachers' Council of the Faculty was held on March 17, 1947. The first generation of 153 students was enrolled in the autumn of 1947 and the first lecture was delivered on November 3, 1947.

Some 20 doctors from Croatia, a half of them faculty staff, joined the initiative of the Government of Macedonia for establishing the Faculty of Medicine in Skopje in 1947. They played leading roles in creating a number of the faculty departments/chairs, establishing seven institutes and two clinics within the newly established Faculty of Medicine in Skopje in 1947 and in the first ten years of its development.

Conclusion: Establishing the Faculty of Medicine in Skopje in 1947 was a crucial decision of the Government of Macedonia for improving the poor health status of the population after World War II and for the overall further development of the health system and provision of health care to the population of Macedonia. The contribution of

the doctors from Croatia to the establishment and initial development of the Faculty of Medicine in Skopje, Macedonia, during the period 1947–1960, was remarkable and important.

Key words: faculty, medical; establishment, initial development; education, medical; teaching; Macedonia; doctors from Croatia.

Introduction

Macedonia was under the rule of the Ottoman Empire for more than five centuries, until 1912. Enslaved and oppressed, with cultural regression, the Macedonian population was exposed to all possible acute and chronic infectious diseases, such as cholera, smallpox, exanthematous and abdominal typhus, diphtheria, tuberculosis, malaria, etc. There was only a small number of educated medical personnel. Exceptionally, there were physicians in the large cities who had graduated from universities in Istanbul, Athens or from some western European universities. The physicians had to meet, first of all, the health-related needs of the military garrison troops and then to help the civilians. Various charlatans, quacks and herbalists practised their non-expert work for treatment of the diseases of the population. The Ottoman Empire left only two hospitals for civilians, one in Skopje and one in Bitola [1, 2].

The health-related situation did not improve remarkably between the First and Second World Wars. The liberation of Macedonia from the centuries-long slavery happened in November 1944, revealing the difficult economic, cultural and health situations: a devastated and ruined country, a poor, hungry and exhausted population, a culture in regression, poor economic conditions and under-developed healthcare services, neglected pathology, numerous endemic spots and high morbidity and mortality of the population, especially of the newborn, infants and small children [1, 3].

Malaria in Macedonia caused a real tragedy, with more than 300,000 infected. The huge swamps were an unflagging source for malaria parasites and victims among the exhausted population. Tuberculosis was also a very severe and widespread disease, a disease of the poor, along with many other infectious diseases [1–4].

After the liberation, the newly-formed government, with official authorities but an insufficient number of health personnel, entered the battle for the improvement of the excessively aggravated health status of the population, with poor resources, but with great enthusiasm (Box 1).

In such conditions, in 1945, the gigantic battle against poverty, diseases, centuries-long regression, and for the affirmation of a national identity and auto-

nomy began. The Macedonian alphabet and orthography had to be introduced, while at the same time a University had to be established. An army of unemployed people had to be employed, but sources for their financing had to be found. In addition, capital economic objects had to be built, along with schools, hospitals and other institutions of the communal and sanitary infrastructure necessary for the normal functioning of a country and the quality of life of its people [1, 3].

Box 1. Some indicators of the health status of the population and the network of health institutions and health workers in Macedonia in 1947 [1–3, 5–7]

Population and health status indicators:

Total population (Census 1948): 1,152,986;
 Life expectancy at birth (1948): males 45.9; females 48.2 years;
 Birth rate: 35 per 1,000 population;
 Mortality rate: 13.7 per 1,000 population;
 Population growth rate: 21.3 per 1,000 population;
 Infant mortality rate (1949): 136.1 per 1000 live births;
 300.000 infected with malaria each year;
 30.000 diseased with active tuberculosis;
 High morbidity from typhus and paratyphus, cholera and other diarrhoeal diseases;
 High morbidity from diphtheria, pertusis and other acute communicable diseases in children;
 High morbidity/mortality from anthrax, tetanus, rabies;
 High morbidity from skin and sexually transmissible diseases;
 High morbidity from goiter, nephropathy and other endemic diseases.

Health services indicators:

Doctors: 120/Doctors per 100,000 population: 10;
 Pharmacists: 96/Pharmacists per 100,000 population: 8;
 Nurses: 120/Nurses per 100,000 population: 10;
 Dispensaries: 3 (2 for children, one for TBC);
 Outpatient offices: 56 (50 GPs and specialists, 6 for school-children);
 Stomatological surgeries: 7;
 Antimalarial stations: 18;
 Hospitals: 9;
 Hospital beds: 868/Hospital beds per 1,000 population: 0.72;
 Public health institutes: 1.

It was especially important to create a network of health organizations working for primary and secondary health care (outpatient offices, polyclinics, dispensaries, hospitals), as well as institutions for specialized and super-specialized health care (clinics, institutes, health centres, etc.). However, above all, medical professionals, qualified and educated medical staff were needed, and Macedonia lacked them badly at that time [1, 3].

All in all, these shortcomings and problems had to be overcome, centuries to be bridged, and the People's Republic (PR) of Macedonia had to become not

only *de jure*, but *de facto* an equal member of the fraternal community of the Federal People's Republic (FPR) of Yugoslavia.

Main reasons and initiative for establishing the Faculty of Medicine in Skopje

In 1945 there were only three medical faculties in the FPR Yugoslavia (in Belgrade, Zagreb and Ljubljana) per approximately 16,000,000 inhabitants. The total number of physicians at that time was about 3,000 or one physician per 5,300 inhabitants. In Macedonia, the situation was even graver, with one physician per 10,000 inhabitants [1, 3].

Since the socio-economic, cultural and health situations of the population in Macedonia were severe, the huge need for educating medical professionals was even more clearly perceived. The existing medical faculties in Belgrade, Zagreb and Ljubljana alone could not solve the problem of lack of health and medical personnel in the FPR Yugoslavia. Thus, an imperative was imposed for the establishment of two new medical faculties, in Skopje and in Sarajevo [1, 3, 8].

In addition to educating medical professionals, there was another serious reason for establishing a medical faculty in Skopje: establishing research institutions for profound examination of the national pathology, especially of infectious diseases, which were seriously aggravating the health and life of the population in Macedonia.

In that grave period, in 1945, the Government of the PR Macedonia, besides numerous operative decisions, made two strategic decisions of long-term significance [3]:

1. To conduct melioration of the swamps in Struga, Bitola and other regions in Macedonia, and thus destroy the mosquito beds that transmitted the malaria parasite and consequently save thousands of innocent victims; and
2. To make efforts to establish a Medical Faculty in Skopje.

At that time both decisions were extremely courageous and ambitious, but later it was proved that they were of enormous importance for the improvement of the health status of the population and further development of the health services and health system in Macedonia.

Aim: The aim of this study is to analyse available archive materials and data and present the milestone activities and actors, with special emphasis on the contribution of doctors from Croatia in the establishment and initial development of the Faculty of Medicine in Skopje, Macedonia, in the period 1947–60.

Methods

Various data and reports, archive materials, encyclopedias from Macedonia and Croatia, jubilee publications of the Faculty of Medicine in Skopje and other

institutions, a review of the relevant literature and other relevant sources of information were used in order to meet the aim and objectives of this study.

Results

The real activities for establishing a Medical Faculty in Skopje began in 1946 when the Ministry of Public Health of the Government of PR Macedonia, by the virtue of Act no. 4745 of August 30, 1946, addressed the Committee of Public Health of the Government of FPR Yugoslavia with a request to undertake action for the foundation of a Medical Faculty in Skopje.

The Committee of Public Health of the Government of FPR Yugoslavia, by the virtue of Act no. 120 of September 26, 1946, formed a Commission consisting of 10 members that explored the possibilities of establishing a Faculty of Medicine in Skopje [1, 3]. On October 22, 1946, at a meeting held in Skopje, the Commission analysed the situation and the possibilities and reached the conclusion that all the conditions for establishing a Medical Faculty in Skopje were fulfilled and suggested the constitution of a Commission of Registrars (Box 2).

Box 2. Composition and conclusions of the Commission for exploring the possibilities for establishing the Faculty of Medicine in Skopje (created on Sept 26, 1946), [1, 3, 9]

Members:

1. Dr. Nikola Nikolić, Secretary of the Committee of Public Health of the Government of FPRY;
2. Nemanja Madjarević, Chief, Unit of High Schools, Committee of Schools and Science, of the Government of FPRY;
3. Prof. Dr. Aleksandar Gjorgjević, from the Faculty of Medicine in Belgrade;
4. Prof. Dr. Božo Lavrič, from the Faculty of Medicine in Ljubljana;
5. Prof. Dr. Ante Premeru, from the Faculty of Medicine in Zagreb;
6. Prof. Dr. Sergej Saltikov, from the Faculty of Medicine in Zagreb;
7. Prof. Dr. Miloe Vidaković, from the Faculty of Medicine in Belgrade;
8. Doc. Dr. Aleksandar Sabovljević, from the Faculty of Medicine in Belgrade;
9. Dimče Levkov, Assistant Minister of Education in the Government of PR Macedonia;
10. Dr. Gjorgji Gavrilski, Assistant Minister of Public Health in the Government of PR Macedonia.

Conclusions issued at the first meeting of the Commission (held on October 22, 1946)

1. A medical faculty in Skopje must and could be established for the following reasons:
 - the number of physicians in PR Macedonia is very small and the existing medical faculties in Belgrade, Zagreb and Ljubljana cannot provide the necessary medical personnel since the other republics also lack physicians;
 - it is urgently necessary to have one medical centre such as a medical faculty in PR Macedonia in order to deal with the specific pathology of this region;
2. The General County (Zemska) Hospital in Skopje, with its about 640 beds, can temporarily provide conditions for clinical education and for the realization of preclinical education some premises of the Hygiene Institute can also be used;
3. Plans for construction of buildings for all institutes and clinics have to be prepared, as a permanent solution for conducting the activities of the Medical Faculty in Skopje;

4. Help is required from the Medical Faculties in Belgrade, Zagreb and Ljubljana, within the framework of their possibilities, concerning equipment, a library and other teaching materials;
5. In the beginning, extra funds from the governments of both PR Macedonia and FPRY would be necessary;
6. To create a core group of teachers for initiating the teaching process and, at the same time, to send young researchers from PR Macedonia on study training within the country and abroad;
7. The teaching process at the Faculty of Medicine in Skopje is to begin on 1st of September 1947;
8. In the beginning, a total of 150 to 200 students are to be enrolled at the Faculty;
9. To constitute a Commission of Registrars, giving suggestions for its members.

Additionally, the Commission recommended concrete measures that were to be undertaken by the governments of both PR Macedonia and FPR Yugoslavia in order to accomplish activities regarding the establishment of a Faculty of Medicine in Skopje, in the following year, 1947 [1, 4].

The conclusions of the Commission, submitted and accepted by the Committee of Public Health of the Government of FPR Yugoslavia, were of crucial importance for the further activities of the Commission of Registrars and preparations for establishing a medical faculty in Skopje.

The first meeting of the Commission of Registrars, held in continuity for several days, was November 25–30, 1946 [1, 3, 9], in the premises of the Ministry of Public Health of the Government of PR Macedonia (Box 3).

Box 3. Composition and initial activities of the Commission of Registrars for establishing a Faculty of Medicine in Skopje [1, 3, 9]

Members:

1. Prof. Dr. Miloe Vidaković, from the Faculty of Medicine in Belgrade;
2. Prof. Dr. Ante Premeru, from the Faculty of Medicine in Zagreb;
3. Prof. Dr. Janez Milčinski, from the Faculty of Medicine in Ljubljana;
4. Prof. Dr. Aleksandar Sabovljević, from the Faculty of Medicine in Sarajevo;
5. Dimče Levkov, assistant to the Minister of Education in the Government of Macedonia, and
6. Dr. Georgi Gavrilski, assistant to the Minister of Public Health in the Government of Macedonia.

Initial activities at the first meeting, held Nov 25–30, 1946:

- Operative plan for further work and activities;
- Plan for utilizing the existing premises for education and work at the Faculty of Medicine in Skopje;
- The problem of the lack of teaching staff was discussed and a Working Group was founded to provide information about experts from Macedonia and from the other republics of FPRY who would be eventual future teachers/professors at the Faculty of Medicine in Skopje;
- Plan for supplying necessary laboratory material, apparatus and professional books was made;
- Projection of the budget of the Medical Faculty in Skopje for 1947 was made.

The second meeting of the Commission of Registrars was held at the Committee of Public Health of the Government of FPR Yugoslavia in Belgrade on January 3, 4, and 5, 1947, and the third meeting on February 18, 1947 [9]. Then the proposal was made for naming the first 19 teachers at the Faculty of Medicine in

Skopje, of whom 5 were full professors, 3 associate professors, 8 assistant professors and 3 honorary professors – assistants (Box 4).

Box 4. Recommendations issued at the third meeting of the Commission of Registrars for establishing a Faculty of Medicine in Skopje, held on Feb 18, 1947 [1, 3, 9]

1. To create a core group of lecturers from the following faculty staff:
 - Dr. Sterio Bozdov, Professor of Hygiene;
 - Dr. Miloe Vidaković, Professor of Physiology;
 - Dr. Mario Krmpotić, Professor of Internal Medicine;
 - Dr. Dimitrie Juzbašić, Professor of Surgery;
 - Dr. Božidar Niketić, Professor of Psychiatry;
 - Dr. Boris Spirov, Associate Professor of Internal Medicine;
 - Dr. Gligor Muratovski, Associate Professor of Phthysiology (TBC);
 - Dr Ernest Hameršmit, Associate Professor of Dermatovenerology;
 - Ing. Radivoj Sajfert, Assistant Professor of Chemistry;
 - Dr. Leon Melkonijjan, Assistant Professor of Anatomy;
 - Dr. Zdenko Križan, Assistant Professor of Anatomy;
 - Dr. Dimitrie Atanacković, Assistant Professor of Pharmacology;
 - Dr. Panče Karagjozov, Assistant Professor of Surgery;
 - Dr. Mirko Knežević, Assistant Professor of Pathology;
 - Dr. Haralampie Mančev, Assistant Professor of Paediatrics;
 - Dr. Ruža Verner, Assistant Professor of Histology;
 - Dr. Petre Zdravev, Honorary Lecturer in Otorhinolaryngology;
 - Dr. Mihajlo Živković, Honorary Lecturer in Physics;
 - Boris Vitanov, Honorary Lecturer in Biology;
2. Dr. Sterio Bozdov was elected to be Acting Dean of the Faculty of Medicine, and Dr. Miloe Vidaković Acting Associate Dean;
3. The first meeting of the Teachers' Council of the Faculty was held on March 17, 1947;
4. The teaching process at the Faculty of Medicine in Skopje was to begin in September 1947.

All the conclusions and recommendations of the Commission of Registrars presented in the previous four items were accepted by the Committee of Public Health of the Government of FPRY at a meeting held on February 20, 1947. At the same time, the Committee proposed to the Ministry of Public Health of the Government of PR Macedonia that it pass adequate decisions on composing a core group of teachers/professors appointed to conduct the teaching process at the Faculty of Medicine in Skopje [3, 9].

On February 25, 1947, the Ministry of Public Health of the Government of PR Macedonia accepted all the recommendations from the Commission of Registrars. A few days later they were also accepted by the Ministry of Education of the Government of PR Macedonia. Thus all the necessary procedures undertaken by the Government of FPR Yugoslavia and the Government of PR Macedonia for establishing a Faculty of Medicine in Skopje were accomplished [3, 9].

In line with this, on March 6, 1947, the Government of Macedonia issued a Decree for the foundation of the Faculty of Medicine in Skopje and for appointing

the first core group of teachers/professors proposed by the Commission of Registrars. Prof. Dr. Sterio Bozdov was appointed to be the Acting Dean and Prof. Dr. Miloe Vidaković the Associate Dean of the Faculty [1, 3, 9].

When all these formal legal, professional and organizational preparations for establishing the Faculty of Medicine in Skopje were completed, the way was clear for the final opening of the Faculty.

The first meeting of the Teachers' Council of the Faculty of Medicine in Skopje was held on 17th March 1947 in the premises of the General County Hospital in Skopje. The meeting was attended by the 19 appointed professors, the members of the Commission of Registrars, the Minister of Education of the Government of Macedonia Nikola Minčev, the Minister of Public Health of the Government of Macedonia Dr. Vukašin Popadić and the Dean of the Faculty of Philosophy in Skopje Prof. Dr. Mihail Petruševski. The meeting was chaired by the Acting Dean, Prof. Dr. Sterio Bozdov. The agenda was very modest, but it was the first meeting of the Teacher's Council of the Faculty of Medicine in Skopje and it was actually the beginning of the real existence and activities of this Faculty [1, 3, 9, 10].

This meeting was important not only because it was the first, but also because of the conclusions adopted (Box 5).

Box 5. Conclusions adopted at the first meeting of the Teachers' Council of the Faculty of Medicine in Skopje, held on March 17, 1947 [1, 3, 11, 12]

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|---|----------|
| 1. The teaching of preclinical subjects was to be organized in the premises of the Hygiene Institute and in the prefabricated premises of the Secondary Nursing School; | |
| 2. Departments of the General County Hospital were to be rearranged into adequate clinics: | |
| – Clinic of Surgery | 160 beds |
| – Clinic of Internal Medicine..... | 110 |
| – Clinic of Paediatrics | 60 |
| – Clinic of Gynaecology and Obstetrics..... | 50 |
| – Clinic of Psychiatry | 38 |
| – Clinic of Infectology | 67 |
| – Clinic of Dermatovenerology..... | 27 |
| – Clinic of Ophthalmology..... | 35 |
| – Clinic of Ear, Nose and Throat Diseases. | 35 |
| – Institute of Tuberculosis | 60 |
| 3. The budget of the Faculty of Medicine for 1947 was to be 5 440 000 dinars; | |
| 4. The teaching process was to begin on September 1, 1947. | |

In 1947 the first six institutes of the Faculty of Medicine in Skopje were formed (for anatomy, histology, chemistry with biochemistry, physiology, pathology and pharmacology). The institutes were located in the temporary premises of the Secondary Nursing School and the Institute of Hygiene. At the same time construction of the building of the institutes began, into which the institutes mo-

ved in late 1948 and early 1949. Two amphitheatres with 150 seats each for theoretical lectures were constructed within the buildings of the institutes. The Institute of Pathological Physiology was founded within the Institute of Physiology in 1949, and received its own building in 1964, the same building where it is situated today. The Institute of Microbiology and Parasitology and the Institute of Forensic Medicine and Criminology were formed in 1952. The Institute of Epidemiology was founded in 1984, and the Institute of Social Medicine and the Institute of Immunology and Human Genetics were established in 1997.

The fourth meeting of the Teachers' Council was held on October 22, 1947 and the first regular management body of the Faculty of Medicine in Skopje was elected, by secret ballot, i.e. Prof. Dr. Sterio Bozdov as Dean, and Prof. Dr. Miloe Vidaković as Vice-dean.

This was the beginning of the regular work of the Faculty of Medicine in Skopje and the work of the Commission of Registrars ceased. The Teachers' Council had the power of Faculty Management, having the right to resolve not only education-related issues, but organizational, staff, financial and other issues related to the work and existence of the Faculty. At the same meeting, it was stated that the education process had not been able to begin on September 1, 1947, due to numerous technical and organizational problems. However, it was decided that the regular teaching process should begin on November 3, 1947, and its beginning was announced at the invited lecture in anatomy by Assist. Prof. Dr. Zdenko Križan, together with a pedagogic educational note and a motivational and emotional speech [1, 3, 9].

Thus the regular education process for the first generation of 153 enrolled students at the Faculty of Medicine in Skopje began on November 3, 1947, in accordance with the 6-year Plan and study regimen identical to the plans and regimens of study in other medical faculties in FPR Yugoslavia [1, 3, 8, 10, 11, 13, 14].

The official promotion of the first 6 doctors, graduated from the Faculty of Medicine in Skopje, was held on December 30, 1953. During the subsequent five years, until 1958, only 85 doctors from the first generation graduated [5, 15]. Most of them were promptly engaged in health service delivery throughout Macedonia [5, 16].

Doctors and lecturers from Croatia who contributed to the establishment and initial development of the Faculty of Medicine in Skopje

The leading doctors and lecturers from Croatia who were the most actively involved in activities and contributed the most to the establishment and initial development of the Faculty of Medicine in Skopje, in the period 1947–1960 and beyond, are presented in Table 1 in alphabetical order.

TABLE 1

Leading doctors and lecturers from Croatia who contributed in establishing and initial development of the Faculty of Medicine in Skopje in the period 1947–1960 [4, 8, 12, 17, 18]

Family and first name	First election as lecturer at the FM-Sk., field of expertise, year	Place and date of birth	Graduated at	Contributed to the development of a chair, institute, clinic, field	Managerial function and period of performance
Belija Božidar	Professor in Chemistry, and Biochemistry, 1947	Rijeka, Croatia, 20.11.1904	Faculty of Medicine in Zagreb	Chair of Chemistry and Biochemistry, Institute of Chemistry and Biochemistry	Head of the Chair, 1948–1960, Director of the Institute, 1948–1954
Berkeš Ivan	Professor in Biochemistry, 1954	Bjelovar, Croatia, 1910	Faculty of Medicine in Zagreb	Chair of Biochemistry, Institute of Biochemistry	Head of the Chair and Director of the Institute, 1954–1960
Bujan Veljko	Professor in Forensic Medicine and Criminology, 1952	Novska, Croatia, 22.02.1905	Faculty of Medicine in Berlin, Faculty of Law in Belgrade	Chair and Institute of Forensic Medicine and Criminology	Head of the Chair and Director of the Institute, 1952–1972
Verner Ruža	Assistant Profesor in Histology and Embriology, 1947	Viškovci, Gjakovo, Croatia, 16.02.1900	Faculty of Medicine in Zagreb, 1933	Chair and Institute of Histology and Embriology	Head of the Chair and Director of the Institute, 1948–1972
Juzbašić Dimitrie	Profesor in Surgery, 1947	Daruvar, Croatia, 30.09.1909	Faculty of Medicine in Belgrade, 1934	Chair and Clinic of Surgery	Head of the Chair and Director of the Clinic, 1948–1953; Dean, 1951–1952
Knežević Mirko	Assistant Professor in Pathologic Anatomy, 1947	NA	Faculty of Medicine in Zagreb	Chair and Institute of Patologic Anatomy	Head of the Chair and Director of the Institute in 1947
Križan Zdenko	Assistant Professor in Anatomy, 1947	Praga, Czech Republic, 13.02.1915	Faculty of Medicine in Zagreb, 1940	Chair and Institute of Anatomy	Head of the Chair and Director of the Institute, 1948–1957; Dean, 1953–1954
Novak Josip	Assistant Professor in Radiology, 1955	Zagreb, Croatia, 16.10.1919	Faculty of Medicine in Zagreb, 1942	Institute of Radiology	Head of the Department of Experimental Diagnostic Radiology
Oberhofer Branko	Professor in Surgery, 1954	Križevci, Croatia, 18.11.1913	Faculty of Medicine in Zagreb, 1937	Chair and Clinic of Surgery	Head of the Chair and Director of the Clinic, 1954–1956
Sušec Gjuro	Professor in Orthopedics, 1956	Zagreb, Croatia, 21.06.1914	Faculty of Medicine in Zagreb, 1939	Chair and Clinic of Ortopedics	Head of the Chair and Director of the Clinic, 1958–1969

The teachers from Croatia, shown in Table. 1, contributed to the establishment and development of certain departments/chairs and organizational units (institutes and clinics) of the Faculty of Medicine in Skopje in the first years of its establishment and thus performed certain managerial functions. Below are shown the dates and conditions of formation of 7 institutes (chemistry, biochemistry, forensic medicine and criminology, histology and embryology, pathologic anatomy, anatomy and radiology) and 2 clinics (surgery and orthopaedic surgery), and the relevant chairs within them, at the Faculty of Medicine in Skopje, as well as the teachers, in alphabetical order by the first letter of the family name, who provided a key contribution to the establishment and development of these institutes, clinics and departments:

1. Institute of Chemistry and Biochemistry

At first, after its establishment in 1947, the Institute of Chemistry and Biochemistry, was located in a shed in the grounds of the Faculty. When the building of the institutes at the Faculty of Medicine was completed in 1948, the Institute of Chemistry and Biochemistry was moved into new premises [8, 12]. The Institute of Biochemistry was integrated and functioned within the Institute of Chemistry, and the biochemistry course was taught by the Professor of Chemistry, Professor Dr. Božidar Belija (Box 6).

Box 6. Božidar Belija, Professor of Chemistry and Biochemistry [17, 18]



Prof. Božidar Belija was appointed as a lecturer in the subjects of chemistry and biochemistry at the Faculty of Medicine in Skopje in 1948.

Prof. Belija, as the first Director of the Institute of Chemistry and Biochemistry and the first Head of the Department of Chemistry and Biochemistry, organized and carried out the teaching in chemistry and biochemistry until 1954, when the Institute of Biochemistry and Department of Biochemistry were established separately. The biochemistry course continued to be led by the newly appointed Head of the Department and Director of the Institute of Biochemistry, Prof. Ivan Berkeš, between years 1954 and 1960.

Prof. Belija continued to implement the course in chemistry and to perform the functions Head of the Chair of Chemistry and Director of the Institute

of Chemistry at the Faculty of Medicine until 1959. He ceased his work at the Faculty of Medicine in Skopje in 1959.

Prof. Božidar Belija died in Zagreb in 1981.

The Institute of Biochemistry received its facilities in 1954 when it was established as an independent Institute within the Faculty of Medicine in Skopje [12]. At the same time the Chair/Department of Biochemistry was established. The Professor Dr. Ivan Berkeš (Box 7) was appointed Director of the Institute and Head of the Department of Biochemistry.

Box 7. Ivan Berkeš, Professor of Biochemistry [8, 12, 17]



Prof. Dr. Ivan Berkeš was born in Bjelovar, Croatia, in 1910. He graduated and, later on, presented successfully his doctoral dissertation in the field of biochemistry at the Faculty of Medicine in Zagreb, in 1939.

Prof. Berkeš was elected as a teacher of Biochemistry at the Faculty of Medicine in Skopje in 1954.

Prof. Berkeš was the first Director of the Institute of Biochemistry and the first Head of the Department/Chair of Biochemistry at the Faculty of Medicine in Skopje. He organized and performed the teaching in the biochemistry course until 1960, when he continued his career at the Faculty of Pharmacy in Belgrade.

Prof. Dr. Ivan Berkeš died in Belgrade in 1997.

2. Institute of Forensic Medicine and Criminology

The Institute of Forensic Medicine and Criminology was founded in 1952. At the beginning it was located in part of the premises of the Institute of Pathological Anatomy. In 1955, the Institute was transferred to a separate, newly-adapted building in a location where the modern building of the Institute is located today [8, 12].

The lectures in the course on forensic medicine, according to the Statute of the Faculty of Medicine directed to the IX and X semester students, began in 1952. The first Head of Department and Director of the Institute was Professor Dr. Veljko Bujan (Box 8).

Besides teaching medical students at the Institute, lecturers were appointed for the students at the Faculty of Dentistry, Faculty of Law and secondary School of Criminology at the Ministry of the Interior in Macedonia, as well as the training of doctors on obligatory medical internships.

Box 8. Veljko Bujan, Professor of Forensic Medicine and Criminology [8, 12, 17, 18]

Prof. Dr. Veljko Bujan graduated from the Faculty of Medicine in Berlin. His specialization was in forensic medicine and criminology, as well as in gynaecology and obstetrics. He had also graduated from the Faculty of Law in Belgrade. Prof. Bujan was elected teacher at the Faculty of Medicine in Skopje in 1952. He was founder and first Director of the Institute of Forensic Medicine and Criminology, and the Head of the Chair of Forensic Medicine and Criminology in the period 1952–72.

Prof. Bujan led the teaching of the Forensic Medicine and Criminology course within the above mentioned period, provided the newly-established Institute with the necessary equipment, and educated younger colleagues who later developed into renowned experts.

Prof. Bujan worked at the Institute of Forensic Medicine and Criminology with great enthusiasm and diligence, and contributed to the discipline's being developed to high level. This was to the benefit and satisfaction of the students, the Faculty of Medicine and medical forensic investigators, with whom the Institute collaborated consistently and successfully.

Prof. Dr. Veljko Bujan died in Skopje in 1972.

3. Institute of Histology and Embryology

The first temporary premises of the Institute of Histology and Embryology were provided within the Deker's shed in the grounds of the former Institute of Hygiene. In 1948 the Institute was moved into the Institutes building, first in facilities shared with the Institute of Anatomy, and then in its own premises [8, 12]. The first teacher of histology and embryology, Assistant Professor Dr. Ruža Verner, was appointed in 1947. She was appointed Director of the Institute of Histology and Embryology in 1948 (Box 9).

Prof. Verner was also an adjunct teacher of the histology and embryology course for students from the biological group of the Faculty of Natural Sciences and Mathematics from 1947 to 1965, and adjunct professor at the Faculty of Medicine in biology, from 1948 to 1959.

Box 9. Ruža Verner, Professor of Histology and Embriology [8, 12, 17–19]

Prof. Dr. Ruža Verner was elected teacher of histology and embryology, being one of 19 lecturers of the first core group at the Faculty of Medicine in Skopje in 1947.

Prof. Verner was the founder and the first Head of the Department and the first Director of the Institute of Histology and Embryology, in the period from 1948 to 1972.

She was a modest, hard-working and persistent person, devoted with great love to teaching histology and embryology to several generations of students, seeking to convey not only theoretical but practical knowledge in histology. Prof. Dr. Ruža Verner devoted the entire active period of her life to her profession and science.

Prof. Verner worked at the Faculty of Medicine until her retirement in 1972.

Prof. Dr. Ruža Verner died in Gjakovo, Croatia, in 1981.

4. *The Surgical Clinic*

The Surgical Clinic at the Faculty of Medicine in Skopje was established on March 17, 1947, at the same time as the base of the Faculty of Medicine was set up. The Department of Surgery of the General County Hospital in Skopje, with a somewhat increased capacity of hospital beds, served as a base for the newly-formed clinic. Following its formation, the Surgical Clinic had 160 hospital beds, and after three years (1950) the number of beds increased to 180. In the next nine years, until 1959, the number of beds again increased to 275 [8, 12]. Early in the first years of its existence the clinic had the character of a general medical surgical facility, and later on was transformed into many super-specialist departments and sections that grew into today's special university clinics as follows:

- Traumatology Department / Clinic;
- Thoracic and Vascular Surgery Department / Clinic;
- Abdominal Surgery Department / Clinic, for both men and women separately;
- Urology Department / Clinic;
- Paediatric Surgery Department / Clinic;
- Anaesthesia, Resuscitation and Intensive Care Department / Clinic (KARIL);

– Surgical out-patient clinics with their own facilities, polyclinic operating rooms, x-ray cabinet, gypsum/plaster hall, polyclinic laboratory, and a separate staff;

– Section of operating rooms, pharmacy, medical documentation with photo-laboratory, chemical and biochemical laboratory.

The first director of the Surgical Clinic, from 1947–1953, was Prof. Dr. Dimitrie Juzbašić (Box 10). The professional staff of the of Surgical Clinic worked to help the surgical wards in Štip, Kumanovo, Ohrid, Bitola and Gnjilane, as well as organizing and shaping the Department of Surgery within the City Hospital in Skopje.

Box 10. Dimitrie Juzbašić, Professor of Surgery [8, 12, 17, 18, 20]



Prof. Dr. Dimitrie Juzbašić was elected as a teacher in surgery at the Medical Faculty in Skopje in 1947, along with the first core group of 19 teachers.

Prof. Juzbašić was the founder and became the first Director of the Surgical Diseases Clinic, created on March 17, 1947, and the first Head of the Surgical Department at the Faculty of Medicine in Skopje, in the period from 1948 to 1953.

In the period from 1951–1952, Prof. Juzbašić served as the Dean of the Faculty of Medicine in Skopje.

With his outstanding organizational and pedagogical skills, knowledge and international experience gained in Germany and Switzerland, Prof. Juzbašić

raised the surgical unit into a modern University Surgical Clinic, which at that time served as an outstanding example.

Unfortunately, Prof. Juzbašić soon left the Faculty of Medicine in Skopje, in 1953, when he was elected Director of the Surgical Clinic at the Faculty of Medicine in Zagreb. He died in 1974.

In the period from 1954 to 1956, the second Director of the Surgical Clinic and Head of the Department of Surgery was Prof. Dr. Branko Oberhofer (Box 11).

Box 11. Branko Oberhofer, Professor of Surgery [8, 12, 21, 22]

Prof. Dr. Branko Oberhofer was Professor of Surgery at the Faculty of Medicine in Skopje in the period 1954–1956. In the same period he was Head of the Department of Surgery and Director of the Surgical Clinic.

Prof. Oberhofer was the founder of thoracic and cardio surgery (1954) in Macedonia and former Yugoslavia. He performed the first operations to the mitral valves of the heart in the former Yugoslavia and later on he performed open heart surgery with the support of extracorporeal circulation.

Prof. Oberhofer separated surgery into various sub-fields and created certain superspecialist surgical departments at the Faculty of Medicine in Skopje, among them the Anaesthesiology and Intensive Care Department.

Prof. Branko Oberhofer died in Zagreb in 1985.

5. *Institute of Pathological Anatomy*

The Institute of Pathological Anatomy was founded in 1947, along with founding of the Faculty of Medicine in Skopje [8, 12]. The Institute played a significant role in delivering all types of education at undergraduate and postgraduate teaching and specialization levels. At the same time the Institute developed important diagnostic work, such as biopsy, autopsy and other types of analysis as an integral part of general medical practice in Macedonia and beyond. Special attention was devoted to research work as a factor in advancing the delivery of professional and teaching activities and health services. Initially the Institute of Pathology performed its activity at the Institute of Hygiene and the hospital chapel, and then moved into its own premises in the building of the institutes within the Faculty, which was built in 1948. The first Head of the Institute of Pathology was Assoc. Prof. Mirko Knežević from Zagreb who, after several months working in Skopje, returned to the Medical Faculty in Zagreb at the end of 1947.

6. *Institute of Anatomy*

After its foundation in 1947, the Institute of Anatomy was first housed in three modest rooms in an old shed in the grounds of the General County Hospital. In 1948, the Institute of Anatomy received a new space in the newly-constructed building of the Institutes of the Faculty of Medicine, equipped with two

dissecting rooms, an osteological dissectional-preparatory (taxidermist) laboratory, a museum room, lecture hall, facilities for the preparation of macerated preparations, injecting and storing of cadavers, an office library and rooms for teaching staff. With these expanded spatial features and an increased number of posts in the dissection halls, the Institute could perform normal practical teaching for 100–120 students of medicine [8, 12]. The first Head of the Department and Director of the Institute of Anatomy, in the period 1948–1957, was Prof. Dr. Zdenko Križan (Box 12).

Box 12. Zdenko Križan, Professor of Anatomy [8, 12, 13, 17, 18, 23]



Prof. Dr. Zdenko Križan was elected teacher of Anatomy along with the first core group of 19 teachers at the Faculty of Medicine, in 1947. Prof. Križan was also the first Head of the Department of Anatomy and the first Director of the Institute of Anatomy at the Faculty of Medicine in Skopje.

Prof. Križan organized and conducted the lectures of the Anatomy Course for the first and several subsequent generations of students of the Faculty of Medicine in Skopje. He was a highly devoted teacher, working with great love, perseverance and commitment, and with a systematic approach. His desire and ability to educate students will not be forgotten by any of those who

had the opportunity and good fortune to attend and experience his lectures.

In the academic year 1953–54 Prof. Zdenko Križan served as Dean of the Faculty of Medicine in Skopje. In the meantime, on December 30, 1953, he promoted the first 6 doctors who had graduated from the Faculty of Medicine in Skopje.

Prof. Križan remained at the Faculty of Medicine in Skopje until 1957, when he returned to Zagreb upon invitation from the Faculty of Medicine there. He died in Rijeka, Croatia, in 2006.

7. Institute of Radiology

Along with the establishment of the Faculty of Medicine in Skopje, the Institute of Radiology was founded in 1947. Its two divisions, Radio-diagnosis and Radio-therapy, were located in only 4 rooms. It was provided with only two x-ray machines, one for diagnostics and the other for therapy, and one primitive adapted dark room [8, 12, 24].

Initially, working within the Institute there were only one doctor specialist, a radio-diagnostician and 2 hastily-trained radiology technicians without basic school education. The therapy was conducted by an honorary military doctor.

While at that time the newly-opened clinics and institutes of the Faculty of Medicine in Skopje were being rapidly formed and shaped, the Institute of Radiology had to solve three basic problems for its particular establishment: space, equipment and personnel.

The gradual expansion of the Institute was conducted in several stages. In 1955, the Institute of Radiology was joined Dr. Josip Novak, a specialist in radiology and a teacher with the title Assistant Professor (Box 13).

Box 13. Josip Novak, Professor of Radiology [8, 12, 21, 24]



Prof. Dr. Josip Novak graduated from the Faculty of Medicine in Zagreb and completed specialization in radiology in Belgrade. He advanced his education at the Military Medical Academy (VMA) in Belgrade and the Vinča Radiology Institute to specialise in radio diagnostics, dosimetry, scintigraphy and the application of radioisotopes.

Dr. Novak came to Macedonia in 1950, at first to Kavadarci and Strumica, and in 1952 he started work at the Military Hospital in Skopje. He had a freelance assignment to the Faculty of Medicine in Skopje till 1955. He moved to the Faculty of Medicine in Skopje and was elected to the academic title of Assistant Professor of Radiology in 1955.

Prof. Novak made a great contribution to the development of the Institute of Radiology and the Department of Radiology and laid the foundations of experimental diagnostic radiology at the Faculty of Medicine in Skopje.

Prof. Novak remained at the Faculty of Medicine in Skopje until his retirement in 1982, when he returned to Croatia.

In 1957, the Institute received special premises for its two divisions, thus enabling the proper further development of the Institute. In 1963, an expansion and modernization of the premises for the Department of Radio-therapy was enabled. In 1964, the Institute was transformed into the National Institute of Radiology and Oncology within the Faculty of Medicine in Skopje. The Department of Radio-diagnosis was also expanded and modernized in late 1967, located in modern premises, functionally resolved in a proper way and supplied with modern equipment.

8. Clinic of Orthopaedic Diseases

The Clinic of Orthopaedic Diseases, as a separate organizational unit within the Faculty of Medicine in Skopje, was founded in 1956, and was definitely established in 1958, because of the strong need for special treatment of orthopaedic diseases in Macedonia and to provide training in orthopaedics and the organization of scientific research work.

Earlier activity began with only orthopaedic polyclinical work by a doctor, nurse and auxiliary personnel in makeshift premises. In 1953, the Orthopedic Diseases Clinic received space in the building of the Surgical Clinic, with capacity of 60 beds and two rooms in the same building for polyclinical work. At the start of the work, the Clinic had only one doctor specialising in orthopedic diseases and one surgeon. In addition, two doctors began specialization in orthopaedics, together with 5 nurses (one of them a surgical instruments nurse) and the minimum technical staff [8, 12]. Professor Dr. Djuro Sušec, who made a substantial contribution to the further development of the Orthopedic Diseases Clinic within the Faculty of Medicine in Skopje, was appointed Clinic Manager (Box 14).

Box 14. Gjuro Sušec, Professor in Orthopaedics [8, 12, 21]



Prof. Dr. Djuro Sušec completed specialization in orthopaedics in 1947. He was a founder of the Clinic for Orthopaedic Diseases and the first regular teacher of orthopaedics at the Faculty of Medicine in Skopje.

Prof. Sušec was Director of the Orthopaedics Clinic from 1957–69, and the first president of the Orthopaedics and Traumatology Section within the Macedonian Medical Association. He has published several important papers in *Acta Orthopaedica Jugoslavica* and made great contributions to the development of the Orthopaedics Clinic within the Faculty of Medicine in Skopje,

as well as to the development of orthopaedics in Macedonia and beyond, in general.

Prof. Djuro Sušec died in Zagreb in 1976.

As well as the above-mentioned leading teachers from Croatia, who made a key contribution to the establishment and initial development of certain

departments, institutes and clinics of the Faculty of Medicine in Skopje, many other professional practitioners and auxiliary teaching staff participated in the work of the various institutes and clinics and in the realization of, first of all, practical teaching activities. Among them the following doctors specialists and assistant teachers should be mentioned [8, 12]:

- Djurdja Klaić, anaesthesiologist, assistant lecturer, Surgical Clinic, from 1954;
- Štefija Knežević, pathologist, Institute of Pathology, from 1947;
- Ruger Novak, urologist, assistant lecturer, from 1954;
- Želimir Sajfert, surgeon, Surgical Clinic, from 1947;
- Ivan Tomaseo, surgeon, assistant lecturer, Surgical Clinic, from 1954;
- Miroslav Hromatko, doctor who started specialization in surgery, in 1954;
- Alexander Mladen Shtulhofer, doctor who started specialization in surgery, in 1954;
- Ljerka Tarnik Mitreva, psychiatrist, Clinic of Psychiatry, from 1959, who later on, in 1971, acquired the title of Assistant Professor, then Associate Professor and Full Professor. She was Vice Dean of the Faculty of Medicine from 1982 to 1984;
- Lihter Werner, the first librarian in the Library of the Faculty of Medicine in Skopje, and laboratory technician for chemical analysis of water in the Hygiene Institute in Skopje, etc.

Discussion

The Faculty of Medicine in Skopje was founded in 1947 and has gone through many developmental stages, facing all the social turbulences and challenges of the past decades. During the past almost 65 years, the development of the Faculty of Medicine in Skopje has been closely related to the health service in Macedonia and vice versa. The Faculty of Medicine is part of the health system in Macedonia, to which it belongs and for which it works.

The contribution of the Faculty of Medicine in Skopje to the development of health services and improvement of the health status of the population in the Republic of Macedonia has a special significance in the following areas [1, 2, 5, 10, 25, 26]:

1. Establishment and further education of doctors and other medical staff. The first generation at the Faculty comprised 153 students. Up to 2010, 16,559 students had been enrolled at the Faculty of Medicine in Skopje, of whom 10,139 had graduated. Shortly before the formation of the Faculty of

Medicine in Skopje, in 1947, the number of medical doctors in the PR Macedonia was about 120, and number of nurses was the same for a population of almost 1.2 million, or 1 doctor and 1 nurse per 10,000 inhabitants. From 1947 to 2010 449 master's theses were defended (of which 33 were in the field of public health) and 555 PhD theses. In this period, the number of medical doctors employed in the health services (public and private sector since 1991) in the Republic of Macedonia was constantly increasing so that in 2010 the number of medical doctors reached the number of 5,364 (3460 of these or 65% physician specialists). The supply ratio of medical doctors to population in the Republic of Macedonia, which in 2010 accounted for about 2.05 million, was 1 medical doctor per 380 inhabitants, and the ratio of doctors and nurses was 1:2.2 in 2010. In addition to undergraduate studies at the Faculty of Medicine in Skopje, starting from 1959 postgraduate studies for the degree of Master of Science have been conducted, with a duration of 4 semesters, while from 1983 a two-semester teaching curriculum organized for specializing doctors was introduced. Several years later, programmes for super-specializations were introduced. There were other forms of education such as: occasional courses, seminars, innovations in medicine and other forms of continuing medical education for physicians. In 2003 postgraduate studies in the field of public health were introduced, and in 2011 the implementation of a Programme for doctoral studies started, as well as a Programme for doctoral studies in public health at the Faculty of Medicine in Skopje.

2. *Scientific research work.* After World War II, a scientific approach to the study of the specific pathology in the PR Macedonia was of paramount importance for the successful eradication of malaria and other diseases, for a decrease in morbidity and mortality in general, and for increasing the working ability, quality of life and life expectancy of the general population. In the past 60 years, a large number of doctors from the Faculty of Medicine in Skopje have studied, worked, learned and adopted skills in medical faculties and eminent scientific institutions in Belgrade, Zagreb and other centres in former Yugoslavia and in various countries in Europe and worldwide. After receiving new knowledge and experience, they have transferred it and applied it while teaching at the clinics and institutes of the Faculty of Medicine in Skopje. Furthermore, the teachers and collaborating staff from the Faculty of Medicine in Skopje have participated in various national and international professional meetings and scientific councils, exchanging and transferring modern scientific achievements in medicine from developed countries in the world to Macedonia. The exchange of teachers and associates with other countries, professional scientific visits abroad, and invited lectures to other medical faculties, together with other forms of cooperation, have contributed to the establishment of permanent professional and scientific relations, as well as timely and extensive transmission and use of the latest medical advances in our environment.

3. *Highest medical service.* Clinics and institutes of the Faculty of Medicine in Skopje provide a highly differentiated and super-specialist health service, with contemporary diagnostic and therapeutic interventions for the patients with the most serious illnesses. For this purpose, clinics and institutes regularly purchase modern medical equipment, provide continuing education of the staff, introduce new diagnostic and therapeutic methods and thus keep up with the current achievements of medical science and practice in our country and the world.

The main responsibility for the activities for the establishment and initial development of the Faculty of Medicine in Skopje was that of the first personnel, the human resources, dozens of teachers from Macedonia and twice that number of teachers from medical faculties in Zagreb, Belgrade, Ljubljana and some countries in Europe [27]. Later academic and scientific staff were recruited primarily from the graduates at the Faculty of Medicine in Skopje. From the first generation of students who enrolled the Faculty of Medicine in Skopje in 1947 and graduated from it, some 20 doctors received teaching titles at the same institution [5, 13, 26, 28–31]. Thus a reliable route for progress in the future and for further development of the health system was provided, while teaching and educational activities and research with new achievements and lasting results confirmed the reputation of the Faculty of Medicine in Skopje, of which Macedonia is proud.

The Faculty of Medicine in Skopje was the basis for the formation of the Faculty of Dentistry and the Faculty of Pharmacy. The Clinic for mouth, jaw and dental diseases, established in 1948, in 1959 became Department of Dentistry at the Faculty of Medicine in Skopje, with an enrolled first generation of 37 students. The Department of Dentistry at the Faculty of Medicine grew out of the Faculty of Dentistry in Skopje in 1977/78. The Faculty of Pharmacy was also established in 1977/78, with dominant support in the establishment and implementation of teaching by many teachers from the Faculty of Medicine in Skopje [2, 9].

Today, medical science in the Republic of Macedonia completely fits modern European and world trends. The Faculty of Medicine in Skopje today has a highly-specialized personnel and modern equipment. The total number of teachers in 2010 was 218 (150 full professors, 43 associate professors and 25 assistant professors) as well as 39 scientific collaborators and 4 research advisers, 198 assistants and 74 junior assistants. The impressive growth in the number of the teaching staff shows the intellectual, educational and scientific potential of the Faculty. The Faculty of Medicine in Skopje now comprises 12 institutes and 3 teaching bases in preclinical studies segment, and 25 clinics, 3 institutes and 7 teaching bases that participate actively in the teaching and scientific activities of the clinical segment [16, 31]. The hard work and enthusiasm of teachers, doctors

and other professional personnel for the monitoring and development of contemporary trends in medical science and practice have often exceeded the modest capabilities of the society.

The results achieved by the Faculty of Medicine in Skopje, as a modern medical institution, long ago passed the borders of Macedonia and have become an integral and respected part of European and worldwide medical science and practice. With its extensive education, research and medical practice, the Faculty of Medicine in Skopje has justified the confidence of the Government and the citizens of the Republic of Macedonia while performing its important role as an institution of special social interest.

Limitations of the study

More detailed data about some of the doctors and lecturers from Croatia are not available within the sources used for this study. Nevertheless, the data we have collected from various sources provide a clear picture of the support and contribution of lecturers and other experts from Croatia in the establishment and initial development of the Faculty of Medicine in Skopje.

Conclusion

The Faculty of Medicine in Skopje today is a high-level medical, educational, scientific and health care institution within Ss. Cyril and Methodius University in Skopje, and carries out health work through higher education, clinical care, scientific research, and university-level specialist training in the medical sciences and related fundamental fields. Macedonia officially became a part of the Bologna process for redesigning curricula and study programmes for higher education in September 2003.

In the past 60 years the Faculty of Medicine in Skopje has made and continues to make a major contribution to the creation of highly specialized medical staff for the health care system, as well as to the provision of the best available health care for the population of the Republic of Macedonia and beyond. From its foundation until the present day the educational role of the Faculty of Medicine in Skopje has been essential in the education of more than 10,000 doctors in Macedonia. Well-prepared personnel in the health care system are the basic prerequisite and foundation for the organization and provision of quality health care. With the development and exchange of scientific research and findings, the Faculty of Medicine in Skopje, with its institutes and clinics, has grown into the leading health centre in Macedonia for the scientific study of health problems in general and those of special interest in the national pathology, with adequate application of modern methods in diagnosis and treatment.

The Faculty of Medicine in Skopje owes immense gratitude for the generous help extended, first of all, from the medical faculties in Zagreb, Belgrade and Ljubljana. In addition to the first generation of teachers in Macedonia, the faculty staff from other republics in the FPR Yugoslavia and from some countries in Europe contributed a great deal to the establishment and initial development of the Faculty of Medicine in Skopje. Especially great appreciation goes to some ten teachers and the same number of assistant teachers and experts from Croatia, from various fields of medicine, who, together with the teachers and other professional staff from Macedonia and other republics and countries in Europe, invested their efforts, enthusiasm, creativity, expertise and professionalism in the establishment and initial development of the Faculty of Medicine in Skopje. Thus the Faculty of Medicine in Skopje and Macedonia are indebted to them for their contribution to the establishment and development of the Faculty of Medicine in Skopje and the development of medical science and health services in the Republic of Macedonia.

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REFERENCES

1. Lazarevski M, Nikodijević B, Velkov K, Čaparoski R, Glavaš E. Establishment and 40-year development of the Faculty of Medicine in Skopje (1947–1987). [In Macedonian]. In: Lazarevski M, Editor-in-Chief. Faculty of Medicine in Skopje 1947–1987. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1987: 15–50.
2. Polenaković M. Forty Years Since the Establishment of the Association of Societies of Doctors in Macedonia. [In Macedonian]. Macedonian Medical Review. 1985; 39(3–4): 77–86.
3. Nikodijević B. Establishment of the Faculty of Medicine in Skopje in 1947. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 11–19.

4. Markovski A, ed. 50 Years of the Faculty of Medicine in Skopje. [In Macedonian]. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje, 1998: 144.

5. Stojčevski T, Šumkovski M, Nikodijević B. Contribution of the first generation of doctors to the development of the health services in Macedonia and of the Faculty of Medicine in Skopje. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje, 1997: 44–52.

6. Federal Institute for Statistics of the Socialist Federative Republic of Yugoslavia. Statistical Yearbook of Yugoslavia 1979. Federal Institute of Statistics of the SFR Yugoslavia, Belgrade. 1979.

7. Republic Institute for Statistics of the Socialist Republic of Macedonia. Statistical Yearbook of SR Macedonia 1978. Republic Institute of Statistics of SR Macedonia, Skopje. 1978.

8. Andreevski A. Welcoming speech at the celebration of the 20-year jubilee of the establishment of the Faculty of Medicine in Skopje (June 1967). [In Macedonian]. *God Zb Med Fak Skopje*, 1968; 14: 5–14. PMID: 4891458.

9. Žanteva-Naumoska M, Dimitrijević M, Georgievska-Ismail LJ, Maleska-Ivanovska V, Spasovski M, Dimitrov G, etc. Faculty of Medicine in Skopje 1947–2007 (Documents). [In Macedonian]. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje, 1997: 201.

10. Bogoev M. Welcoming speech at the Golden Jubilee of the Medical Faculty in Skopje ceremony, March 17, 1997. [In Macedonian]. In: Markovski A, ed. 50 Years of the Faculty of Medicine in Skopje. Faculty of Medicine, Ss. Cyril and Methodius University, in Skopje. Skopje, 1998: 9–13.

11. Antevski D. Spatial conditions at the Faculty, of Medicine in Skopje in the period from 1947–1953. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 20–4.

12. Lazarevski M, Nikodijević B, Velkov K, Čaparoski R, Glavaš E. Development of the institutions within the Faculty of Medicine in Skopje. [In Macedonian]. In: Lazarevski M, Editor-in-Chief. Faculty of Medicine in Skopje 1947–1987. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje. 1987; 183–345.

13. Križan Z. Rememberings for the first generation of students at the Faculty of Medicine in Skopje. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 68–9.

14. Šumkovski M. The first lecture delivered at the Faculty of Medicine in Skopje (3.11.1947). [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds.

Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 25–8.

15. Arsov C. Promotion of the first doctors graduated at the Faculty of Medicine in Skopje (30.12.1953). [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 38–43.

16. Žanteva-Naumoska M, Polenaković M. Sixty years since the foundation of the Medical Faculty at the Ss. Cyril and Methodius University in Skopje, R. Macedonia (1947–2007). *Prilozi/Contributions, Sec. Biol. Med. Sci., MASA*, 2008; 29(1): 303–7.

17. Ristovski B, Editor-in-Chief. Macedonian Encyclopedia, Part I. [In Macedonian]. Macedonian Academy of Sciences and Arts, Skopje. Skopje, 2009: 837.

18. Stojčevski T, Nikodijević B. The first lecturers at the Faculty of Medicine in Skopje. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 53–67.

19. Bujan V, Miletić D. Review on the candidate for election in associate professor in Histology and Embriology at the Faculty of Medicine in Skopje. [In Macedonian]. *Bulletin of the Ss. Cyril and Methodius University, Skopje*, 1958: 15: 12–16.

20. Brožović D, Editor-in-Chief. General Croatian Encyclopedia. [In Croatian]. Miroslav Krleža Lexicography Institute – Zagreb, Zagreb, 1999: 674.

21. Ristovski B. Editor-in-Chief. Macedonian Encyclopedia, Part II. [In Macedonian]. Macedonian Academy of Sciences and Arts, Skopje. Skopje, 2009: 880.

22. Ravlić S, Editor-in-Chief. General Croatian Encyclopedia. [In Croatian]. Miroslav Krleža Lexicography Institute – Zagreb. Zagreb. 2006; 775.

23. Kovačec A, Editor-in-Chief. General Croatian Encyclopedia. [In Croatian]. Miroslav Krleža Lexicography Institute – Zagreb, Zagreb, 2004: 797.

24. Džočkov J. Distinguished emeritus doctors – Professor Dr. Josip Novak – Radiologist by the General's order. [In Macedonian]. *Vox Medici*, 2008: 17(61): 20–4.

25. Starova V. Welcoming speech at the celebration of 40-year from the establishment of the Faculty of Medicine in Skopje. [In Macedonian]. In: Lazarevski M, Editor-in-Chief. Faculty of Medicine in Skopje 1947–1987. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1987: 11–14.

26. Donev D. Revitalization of Academic Medicine in Macedonia – An Urgent Need. *Croat Med J*; 45(6): 677–83. PMID: 15578799 [PubMed – indexed for MEDLINE]. Available from: <http://www.cmj.hr/2004/45/6/15578799.htm> Accessed: Oct 12, 2011.

27. Karanfilski B. Our first teachers. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 16–19.

28. Atanacković D. Rememberings for the first generation of students at the Faculty of Medicine in Skopje. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 70–1.

29. Šumkovski M. Demonstrators from the first generation. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 29–30.

30. Urumova E. Rememberings for the first generation of students at the Faculty of Medicine in Skopje. [In Macedonian]. In: Nikodijević B, Antova N, Šumkovski M, eds. Almanac of the First Generation of Students at the Faculty of Medicine in Skopje 1947–1953. Faculty of Medicine, Ss. Cyril and Methodius University, Skopje. Skopje, 1997: 72–3.

31. Trajkov D, Petličkovski A, Strezova A, Spiroski M. Sixty Years of the Faculty of Medicine in the Republic of Macedonia (1947–2007). *Maced J Med Sci*; 1(1): 3–12. doi:10.3889/MJMS.1857-5773.2008.0011. Available from: http://www.mjms.ukim.edu.mk/Online/MJMS_2008_1_1/MJMS.1857-5773.2008.0011.pdf Accessed: Oct. 6, 2011.

Резиме

ПРИДОНЕС НА ДОКТОРИТЕ ОД ХРВАТСКА ВО ОСНОВАЊЕТО И ИНИЦИЈАЛНИОТ РАЗВОЈ НА МЕДИЦИНСКИОТ ФАКУЛТЕТ ВО СКОПЈЕ, РЕПУБЛИКА МАКЕДОНИЈА

Поленакoвиќ М.,¹ Дoнев Д.²

¹Македонска академија на науките и уметностите, Скопје, Р. Македонија

²Институт за социјална медицина, Медицински факултет, Универзитет Св. Кирил и Методиј, Скопје, Р. Македонија

Цел: Да се анализираат и прикажат најзначајните активности и актери, со посебен акцент на придонесот на докторите од Хрватска, во основањето и иницијалниот развој на Медицинскиот факултет во Скопје, Р. Македонија, во периодот од 1947–1960 година.

Методи: Ретроспективна студија базирана на архивски материјали и јубилејни публикации на Медицинскиот факултет во Скопје, други релевантни извори на информации, и преглед на релевантна литература.

Резултати: Медицинскиот факултет во Скопје е основан на 6.III 1947 г., со Указ на Владата на Република Македонија, а првиот состанок на Советот на

наставниците на Факултетот бил одржан на 17.III 1947 г. Првата генерација од 153 студенти се запишале во есента 1947, а првото предавање било одржано на 3.XI 1947 година.

Околу 20 доктори од Хрватска, половина од нив наставен кадар, се придружиле на иницијативата од Владата на Македонија за основање на Медицинскиот факултет во Скопје во 1947 г. Тие одиграле водечка улога во создавањето на голем број катедри, како и за основање 7 институти и 2 клиници во новоформиранитот Медицински факултет во Скопје во 1947 г. и во првите десетина години од неговиот развој.

Заклучок: Основањето на Медицинскиот факултет во Скопје во 1947 година беше суштествена одлука на Владата на Македонија за подобрување на крајно влошената здравствена состојба на населението по Втората светска војна и за севкупниот натамошен развој на здравствениот систем и обезбедувањето на здравствената заштита на населението во Македонија. Придонесот на докторите од Хрватска во основањето и иницијалниот развој на Медицинскиот факултет во Скопје, Македонија, во периодот од 1947–1960 год., беше многу значаен.

Клучни зборови: факултет, медицински; основање, иницијален развој; едукација, медицинска настава; Република Македонија; доктори од Хрватска.

Corresponding Author:

Momir Polenakovic
Macedonian Academy of Sciences and Arts
Krste Misirkov 2
MKD-Skopje, R. Macedonia
Phone: +389 2 3235400
Fax: +389 2 3235500

E-mail: maknefpo@t-home.mk