Medical History (2025), 69: 4, 573–591
doi:10.1017/mdh.2025.10043

CAMBRIDGE UNIVERSITY PRESS

ARTICLE

The Soviet export of sleep therapy to the Eastern Bloc countries after the Pavlovian session in 1950

Kristina Popova

Medical Anthropology, Institute of Ethnology and Folklore Studies with Ethnographic Museum, Bulgarian Academy of Sciences, Sofia, Bulgaria
Email: chadoblg@yahoo.com

Abstract

Following the decisions of the scientific session 'For the further flourishing of Pavlov's doctrine' of the Academy of Sciences and the Academy of Medical Sciences of the USSR in 1950, important reforms were introduced under political control in the USSR and the Eastern Bloc countries. Research plans of science institutions and medical university curricula were changed according to these decisions. Scientists and university professors were forced to adopt courses in Pavlovian doctrine. The reforms affected the work of hospitals and sanatoriums, whose staff was instructed to reform the everyday practice. Regarding the clinical work, the session had two main consequences: the introduction of the so-called *Curative-Protective Hospital Regime* and the introduction of sleep therapy for the treatment of psychiatric diseases, hypertension, ulcers, rheumatism, and other diseases. As a widespread therapeutic method, it was established in the 1950s in the USSR and in the countries of the Eastern Bloc as a general reform of health politics. Political (Soviet influence), ideological (dialectical materialism), theoretical (Pavlovian teaching), and practical medical considerations intersected in the implementation of the therapeutic methods which made patients objects of this treatment. This study explores the process of dissemination and establishment of sleep therapy in Bulgarian hospital practice based on the hospital documentation of the Pediatrics Clinic at the Medical Academy and the Clinic of Cardiac Diseases in Sofia in 1952–1953.

Keywords: Sleep therapy; Pavlovian session; Eastern Europe; Protective inhibition; Nervism

Introduction

On 5 January 1952, the student Ivo V., aged 20, was admitted to the First Internal Medicine Clinic in Sofia with a diagnosis of *Morbus hypertonici* and the following symptoms: palpitations, blood pressure 180/110, and easy irritability. According to the disease history, his suffering dated back one year. The student got tired easily, he became especially nervous if he could not complete some task assigned by DSNM,[1] his sleep was disturbed, and he was deeply concentrated on himself.[2] He was prescribed treatment with Luminal 0.10 three times a day, and chloral hydrate 1.5. He fell asleep with a metronome, but the metronome disturbed him. On 11 January, his sleep lasted 10 hours. Speech was slurred, he stammered, and a few days later, he continued to stammer and was anxious. He was assigned Luminal of 0.20 g. On 16 January, he already slept 17 hours, did not complain, walked with unsteadiness, and felt slight dizziness. On 17 January, he slept 21 hours; his balance was improving. The combination with a chloral hydrate enema gave him a lighter sleep. On 19 January, he complained of heaviness in the head.

[1]DSNM – Dimitrov's Union of People's Youth, since 1959 – Dimitrov's Communist Youth Union.
[2]Sofia State Archive, h. 2245, inv. 1, a.u. 52, sheet 1.

© The Author(s), 2025. Published by Cambridge University Press. This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike licence (http://creativecommons.org/licenses/by-nc-sa/4.0), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the same Creative Commons licence is used to distribute the re-used or adapted article and the original article is properly cited. The written permission of Cambridge University Press must be obtained prior to any commercial use.

He had a great attraction to Luminal; he thought he cannot live without it. Insomnia and headache in the parietal region. An attempt at conditioned-reflex sleep failed, and on 21 January, Luminal and chloral hydrate therapy was renewed.[3]

The preserved file of Ivo V.'s hypertension disease history gives detailed information about his treatment and his state during his stay in the hospital, which lasted for a month until the beginning of February 1952. For the rest of his hospital stay, he was treated with Luminal or Luminal plus chloral hydrate. The appointment of these medications for the patient's hypertension, as well as the monitoring of his sleep, was the main content of the sleep treatment, which was widely practiced in Bulgaria at that time. Behind the application of sleep therapy for various diseases—hypertension, rheumatism, ulcers, some skin diseases, and others—there was a prehistory of political, scientific, and power relations, which went far beyond the scope of clinical practice. The widespread application of sleep therapy was a result of the interaction between scientific developments and central political decisions at the highest level in Moscow during the late Stalinist era. These processes involved political figures from the party leadership in Moscow, as well as scientists – mainly physiologists – from central Soviet scientific institutions. The main event was the so-called Pavlovian session in August 1950, whose decisions were implemented not only in the USSR but also in the countries of the Eastern Bloc. One of their consequences was the treatment with sleep therapy, which replaced for several years other therapies for the above-mentioned diseases. This was why the student Ivo V. in Sofia, who entered the clinic for treatment of hypertension, underwent sleep therapy, as did hundreds of other patients in the first half of the 1950s.

Sleep in its cultural and historical context has been a frequent subject of research attention in recent decades. Roger Ekirch,[4] Simon Williams,[5] Matthew Wolf-Mayer,[6] and other authors explore the cultural context, politics, and ideologies of sleep and the imposition of cultural norms on sleep in modern societies. Sleep norms became part of biopolitics, public attention to them increased, and so did scientific research and discussions in the fields of psychiatry and neurology. The scientific interest towards the history and ethnology of sleep research has been growing continuously since the 1970s and has intensified over the past couple of years.[7]

The purpose of this article was to trace the path of sleep therapy from laboratories, scientific units, and party decisions to central health policies and clinical practices with patients in the USSR and other Soviet-bloc countries, more specifically Bulgaria. Soviet and Bulgarian publications in medical periodicals are juxtaposed with the preserved hospital archives about the practical implementation of sleep therapy.

In the twentieth century and especially after the Second World War, medical practice underwent important changes related to the establishment of a new system of relationships between science, technology, and medicine.[8] This change was expressed in a close connection between laboratory science, hospital therapies, and social medicine. The era of biomedicine began, marked by the 'therapeutic revolution' caused by the discovery of new pharmaceuticals and the growth of laboratory and experimental activity.[9]

These processes in Western medicine were also present in the USSR and in Eastern Europe. After the Second World War, in the late Stalinist era, they happened in the framework of strongly centralised

[3] *Ibid.*, Disease history of Ivo V.

[4] A. Roger Ekirch, 'Sleep We Have Lost: Pre-industrial Slumber in the British Isles', *American Historical Review*, 106, 2 (2001), 343–386.

[5] Simon J. Williams, *Sleep and Society: Sociological Ventures into the (Un)known* (New York: Routledge, 2005); Simon J. Williams, *The Politics of Sleep. Governing (Un)consciousness in the Late Modern Age* (London: Palgrave Macmillan, 2011).

[6] Matthew J. Wolf-Meyer, *The Slumbering Masses: Sleep Medicine and Modern American Life* (Minneapolis London: University of Minnesota Press, 2012).

[7] See Hannah Ahlheim, Dariuš Zifonun, and Nicole Zillien, 'Leep, Knowledge, Technology. An Introduction', *Historical Social Research*, 48, 2 (2023), 7–22. https://doi.org/10.12759/hsr.48.2023.13.

[8] Viviane Quirke and Jean-Pail Gaudilliere, 'The Era of Biomedicine: Science, Medicine, and Public Health in Britain and France after the Second World War', *Medical History*, 52, 4 (2008), 441–452.

[9] See Jean Paul Gaudilliere and Volker Hess, *Ways of Regulating Drugs in the 19th and 20th Centuries* (London: The Palgrave Macmillan, 2013).

systems of public health, growing ideological importance of natural sciences and political control over scientists and scientific ideas.[10] A major tool of ideological control was several high-profile academic-political sessions that set the directions of Soviet science in line with the ideology. The case of sleep therapy is not only indicative of the uses and misuses of science in the late Stalinist era, but also reveals the complex pathways, interests and considerations, and struggles: political, economic, professional, personal, and otherwise – of healing and medication prescription – processes of which patients were usually not aware.

In the natural sciences, the VASKhNIL (V.I. Lenin Academy of Agricultural Sciences) 1948 session in Moscow, which criticised and rejected the genetics of Mendel–Morgan–Weisman and confirmed the teaching of Michurin–Lysenko, related to the possibility of inheriting the acquired characteristics, was of fundamental importance. Equally important in the field of medical and biological sciences was the joint session of the Soviet Academy of Sciences and the Soviet Academy of the Medical Sciences – the so-called Pavlovian session from the summer of 1950, prepared under the personal control of Josif Stalin. This session had a strong impact on science, education, medicine, and hospital practice.

The 'Pavlovian session' was not an isolated academic phenomenon, limited to the field of medical science. Together with the decisions of the Agrarian Academy session, it endorsed the thesis of the determining importance of the environment on the development of living organisms and strongly influenced official materialistic philosophical views, whose institutional impact spread over the entire scientific and educational infrastructure. As Krementsov wrote in his 'Stalinist Science', Pavlov's theory was incorporated into Muchurin's teaching[11] in its materialistic argumentation. Together with the other scientific discussions in the years 1947–1950 – in the fields of physics, linguistics, economics, and philosophy – these sessions were meant by Stalin to align all scientific thought with Marxist-Leninist ideology.[12]

Some of Pavlov's most prominent adherents and students – Levon (Leon) Orbeli (1882–1958), Lina Stern (1875–1968), Ivan Beritashvili (1884–1974) – were officially criticised during the session. In contrast, other physiologists – Konstantin Bykov (1886–1859), Nikolay Krasnogorski (1882–1961), the psychiatrist Anatolii Ivanov-Smolenskii (1895–1982) – were proclaimed as bearers of the 'true' Pavlov's doctrine. In addition, the session marked the beginning of a complete reconstruction of the scientific and practical work in the medical and biological education and institutions. Pavlovian committees were set up to control this reorganisation. They had both political and scientific functions.[13]

With the Pavlovian session of 1950, physiology rose to a very high position in the scientific landscape of the USSR. Many new laboratories for experimental work were opened at institutes and hospitals. In Soviet physiology and medicine, the doctrine of '*nervism*' was imposed – an idea expressed at the end of the 19th century by Ilya Sechenov and other physiologists and developed experimentally by Ivan Petrovich Pavlov and his school. It stated the primary importance of the nervous system of the living organism – both in animals and in humans – for the regulation of all physiological functions and processes.[14]

Thus the practical implementations in Soviet hospitals following Pavlov's session were based on some key considerations, such as the notion of the so-called *protective inhibition*, which became central for explaining the aetiology of diseases and treatment options.[15] 'For Pavlov, inhibition and excitation were

[10]See Anna Toropova and Claire Shaw (eds.), *Technologies of Mind and Body in the Soviet Union and the Eastern Bloc* (London: Bloomsbury Academic, 2023).

[11]Nikolai Krementsov, *Stalinist Science* (Princeton, New Jersey: Princeton University Press, 1997), 260–262, 268–270.

[12]See Ethan Pollock, *Stalin and the Soviet Science Wars* (Princeton and Oxford: Princeton University Press, 2006), 212.

[13]See about the activities of the Pavlovian Committee in USSR: L. O. Klymenko and I. G. Strokina, 'The History of the Activity of the "Pavlovian Council" and Its Negative Impact on the Development of Science in 50s of the 20th Century', *Likars'ka Sprava*, 2 (2023), 61–76.

[14]About *nervism* see Daniel P. Todes, *Pavlov's Physiology Factory. Experiment, Interpretation, Laboratory Enterprise* (Johns Hopkins University Press, 2002), 75.

[15]Roger Smith, *Inhibition. History and Meaning in the Sciences of Mind and Brain* (Berkeley and Los Angeles: Univeristy of California Press, 1992).

the two basic nervous processes, each proceeding in waves from its point of origin throughout the cerebral cortex.

For him, inhibition was not simply the absence of a response but was, rather, an active nervous process (of equal status with excitation)'.[16] It was assumed that an important cause of diseases was the imbalance between the processes of excitation and inhibition of the nervous system. The imbalance led to local stagnation of excitement in the cortex, which became a basis of many pathological phenomena. In his late research in the 1930s, Pavlov was especially interested in explaining the aetiology of psychiatric diseases by the imbalance between excitation and inhibition and their treatment with sleep therapy.[17] The term 'protective inhibition' was introduced, emphasising that through this 'protective inhibition', the balance of the nervous system could be restored. It was assumed that sleep could play the role of 'protective inhibition'. For Pavlov, sleep was a generalised internal inhibition[18] playing its 'protection role' for the cortex. He saw inhibition as not only protective but also an important healing tool.[19] According to him, the nervous system did not tolerate strong irritations and responded by developing overprotective inhibition.[20] Based on Pavlov's understanding of sleep as an important phase of inhibition of nerve processes in the cerebral cortex and as protective reaction, sleep therapy was widely recommended.

From 'protective inhibition' to sleep therapy

Sleep therapy was not a new approach in clinical practices. It was introduced at the beginning of the 20th century by the Swiss doctor and scientist Jakob Klaesi (1883–1980) and was also experimented with and practised in other countries.[21] The new element in the USSR was the interpretation of sleep and sleep therapy based on Pavlov's theory and the attempt to apply it as a universal treatment for a wide spectrum of diseases. This construction transformed the practice of sleep therapy into a Soviet medical innovation.[22] The theory of sleep as irradiation of inhibition was also supported by Vladimir Bekhterev.[23] In the 1930s, Soviet psychiatrists Mark Serejskij and Anatolii Ivanov-Smolenskii had introduced sleep therapy and used it for the treatment of psychiatric cases.[24] Pavlov was very interested in this treatment. He held interviews with patients after sleep therapy and found some promising results.[25] During the Second World War, Anatolii Ivanov-Smolenskii continued the implementation of sleep therapy for psychiatric and nervous diseases.

This experience was accepted after the Pavlovian session in 1950 as the starting point for practical work. Regarding clinical work, two main innovations were introduced in hospitals, sanatoriums, and other medical institutions: the so-called *Curative-Protective Hospital Regime*[26] and the introduction of sleep therapy for the treatment of psychiatric diseases, as well as for hypertension, ulcer, rheumatism,

[16]Daniel P. Todes, Ivan Pavlov, *A Russian Life in Science* (Oxford and New York: Oxford University Press, 2014), 735.

[17]George Windholz, 'Pavlov's Concept of Schizophrenia as Related to the Theory of Higher Nervous Activity', *History of Psychiatry* 4 (1993), 511–526. George Windholz, 'Pavlov's Conceptualization of Paranoia within the Theory of Higher Nervous Activity', *History of Psychiatry* 7, (1996), 159–166.

[18]Todes, *op. cit.* (note 16), 512.

[19]M. A. Usiyevich, 'Osnovnyye zakonomernosti ucheniya I. P. Pavlova o vysshey nervnoy deyatel'nosti', in V. P. Lebedeva (ed.), Ucheniye I. P. *Pavlova v teoreticheskoy i prakticheskiy meditsine*, 2nd edn. (Moscow: Ministerstvo Zdravookhraneniya SSSR, Tsentral'nyy institut usovershenstvovaniya vrachei, 1953), 37–130; I. V. Strel'chuk, Ucheniye I. P. Pavlova ob okhranitel'nom tormozhenii i lecheniye snom; V. P. Lebedeva (Ed.), *Ucheniye I. P. Pavlova* v teoreticheskoy i prakticheskiy meditsine, 2nd edn. (Moscow: Ministerstvo Zdravookhraneniya SSSR, Tsentral'nyy institut usovershenstvovaniya vrachei, 1953), 531–548.

[20]A. A. Vishnevskiy and A. N. Ryzhikh, 'Medikamentoznyy son po Ivana P. Pavlovu i novokainovaya blokada nervov kak metody patologicheskoy terapii', *Klinicheskaya Meditsina* 4 (1951), 3–11.

[21]Todes, *op. cit.* (note 16), 647.

[22]Kenton Kroker, *The Sleep of Others and the Transformation of Sleep Research* (Toronto: University Toronto Press, 2007), 182.

[23]*Ibid.*, 182.

[24]*Ibid.*, 189.

[25]Todes, *op. cit.* (note 16), 647–648.

[26]See Kristina Popova, 'The "Curative-Protective Hospital Regime": A Concept in the Medical and Nursing Practice of the USSR during the 1950s', *European Journal for Nursing History and Ethics*, 2 (2020), 81–100.

and other diseases. The famous Soviet cardiologist Alexander Myasnikov (1897–1972), one of Josif Stalin's personal doctors in the last years of his life, wrote in his memoirs, *I healed Stalin*, about the meaning of the 'Pavlov's session' of 1950 underlining also the 'protective inhibition' and its correspondence with the monistic views of that time:

> From Pavlov's theory followed the conclusion that sleep as an inhibition process eliminated misbalances of the higher nervous activity. And as they [the misbalances] were seen as a common cause of all pathological processes (and we used to be monists – there was always one main reason), thus sleep therapy was seen also as a universal method for the treatment of diseases. The practical 'contribution' of this famous session to medicine was the sleep therapy.[27]

The patient's type of nervous activity according to Pavlov's theory was also considered in the treatment. The so-called excitable nervous type was interpreted as particularly difficult to treat.[28]

In 1951, the Kharkiv State Scientific and Medical Library of the Ministry of Health of Ukraine published a bibliography on sleep therapy with 192 titles published in the period 1934–1950. The sections of the bibliography were as follows: sleep therapy in psychiatry, in neurology, in internal medicine, in surgery, and in obstetrics. The purpose of the publication was to assist the implementation of Pavlovian teaching in medical practice.[29]

The physiological and medical institutes in the Soviet republics were also actively involved in the propaganda and use of sleep therapy. In Yerevan hospitals, sleep therapy was used in the treatment of psychiatric and various other diseases. Laboratory experiments with infected rabbits were conducted in order to prove that sleeping rabbits stay alive much longer than the others.[30] In Baku, the experimental research of Abdulla Karaev also included the influence of medical sleep.[31] Chloral hydrate and Barbamil were used in the experiments with dogs. After eight years of observations, Mamed Efendiev (who had been working with Pavlovian methods since the 1930s) summarised the treatment of patients with sleep therapy (over 800 people in total). Hypertension, asthma, neurosis, ulcer, angina pectoris, malaria, and heart disease were treated with sodium bromide, Luminal, and codeine for 2–4 weeks.[32] In the neurological department patients were treated with conditioned reflex sleep but initially barbiturates were prescribed.[33] From 15 to 18 December 1952, soon after the 19th Congress of the CPSU, representatives of the National Academies of Sciences of the Soviet republics took part in a coordination meeting in Moscow.[34] The topic was 'the development of Pavlov's physiological teaching'. Konstantin Bykov delivered the main report: 'The forthcoming tasks for the development of the Pavlov's teaching in the light of the decisions of the 19th Congress of CPSU'. The coordination meeting distributed the scientific tasks of the national physiology institutes.

Clinical Medicine journal, whose editor-in-chief was the Academy member Miron Semenevich Vovsi (1897–1960), presented both the theoretical points and the clinical practice in the hospitals. *Clinical Medicine* was the most widely circulated medical journal in the USSR, with a print run of 25,000 copies

[27]A. L. Myasnikov, *YE. Chazov. Ja lechil Stalina, Iz secretnih arhivov SSSR*, 117–121. (Eksmo 2011) (https://www.litres.ru/book/aleksandr-myasnikov/ya-lechil-stalina-iz-sekretnyh-arhivov-sssr-611205/.

[28]For the medical and pedagogical science, as well as for the clinical practice in the first half of the twentieth century, and especially between the two world wars, the nervous-excited type, his/her control and therapy were of great interest for the scientists in many countries. In this regard, this classification in the USSR's medicine was no exception. Here, Pavlov's theory was used for explanation and classification of the types of nervous activity in order to use the appropriate medical techniques.

[29]Khronika (Chronicles), *Klinicheskaya meditsina*, 9 (1951), 94.

[30]See Kristina Popova, '"Sleeping Rabbits Stay Alive Two Weeks Longer Than Others": The Institute of Physiology in Yerevan after the "Pavlov's Session" in 1950', *Balkanistic Forum*, 3 (2021), 104–124 (in Bulgarian).

[31]See Abdulla Karaev, *Interoreceptory I obmen veshtestv* (Baku: Izdatel'stvo akademii nauk Azerbaydzhanskoy SSR, 1957).

[32]Mamed E. Efendiyev, 'Primeneniye bromidov pri nekotoryih zabolevaniya vnutrennih organov', *Azerbaijanskij medicinskij zhurnal*, 2 (1955), 77–82.

[33]V. D. Sanikidze and T. T. Guseynov, 'Opyt organizacii lecheniya uslovnoreflektornyim snom v u nevrologichesko otdelenii gospitaliya', *Azerbaijanskij medicinskij zhurnal*, 5 (1956), 76–79.

[34]Popova, *op. cit.* (note 30).

in 1953, which grew to over 40,000 copies three years later.[35] In the years 1950–1954, the entire course of the journal followed the decisions on the reconstruction of medicine on 'Pavlov's rails', although Vovsi was arrested in 1952 in connection with the so-called Doctors' Plot (Delo Vrachej). The journal's task was to translate Pavlov's teaching into the language of clinical work through the exchange of clinical practices and theory, and to propagate practical experience. These publications present the colonisation of the clinical practice in the 1950s by Pavlovian terms, argumentations, treatment methods, and procedures.

The rise of *nervism* as a central concept in medicine determined the important place of pharmacology, and especially the pharmacology of the nervous system, in the 1950s in the USSR. Medicines affecting the nervous system were of key importance. Moreover, Soviet pharmacologists had to be convinced that it was Pavlov's teaching that made it possible to explain the effects of already known drugs. The distinguished pharmacologist and member of the Academy of Medical Sciences, Sergey Anichkov (1892–1981), devoted in 1951 an article to the importance of Pavlovian methods in pharmacology.[36] He himself was Pavlov's student and collaborator from his early years. Anichkov emphasised that, for the first time, the essence of drugs with a typical 'nervous' effect on higher nervous activity – caffeine, bromides, alcohol, chloral hydrate – had been clarified.[37] He highlighted also the impact of drugs such as Luminal and veronal.[38] Pavlov's clinical studies, according to Anichkov, for the first time showed that the sedative action of bromides was the result of an increase in inhibition processes, and not a decrease in excitation, as previously assumed. Caffeine enhanced cortical excitement processes. Alcohol as well as sleeping pills weakened inhibition processes, but then their action spread to excitement processes. Bromine was able to enhance inhibition processes. All this made it possible to apply these medicines to the clinic for nervous and mental diseases. Thus, a wide space was opened for experimental pharmacology in this area.[39]

In his monograph *Pharmacology of the Nervous System*, published in 1953, Vasiliy Zakusov[40] also pointed out that the ideas of *nervism* formulated by Pavlov determined the development of medical sciences.[41] In this way, he wrote, 'the thick fog surrounding pharmacology, and with it the central nervous system' had been dispelled.[42]

He did not deny that the main preparations used in sleep therapy—Luminal, chloral hydrate, and others—were synthesised at the beginning of the twentieth century in other countries.[43] But unlike foreign pharmacologists, who believed that the influence of drugs on the nervous system was unknowable, Soviet pharmacology, based on Pavlov's theory, made it possible to research the effects of these substances on the nervous system and to explain them. Vasiliy Zakusov further emphasised the role of sleep as internal inhibition in the cerebral cortex that protected the brain from exhaustion, as well as the clinical role of sleep therapy in the treatment of neurodermatitis, hypertension, ulcer, neuroses, and mental illnesses. For the application of sleep therapy, the pharmacologist recommended above all barbiturates.[44] The uses of different drugs: chloral hydrate, bromural, sulfonal, veronal, Luminal, Barbamil, sonbutal, medinal, and others, were presented in detail in his book with their effects, purpose,

[35]V. B. Simonenko, Yu. V. Ovchinnikov, and V. G. Abashin, 'Firstling of the Soviet Scientific and Practical Medicine – 100 Year Anniversary of the Journal "Clinical Medicine"', *Klinicheskaya Meditsina*, 98, 8 (2020), 565–573. http://doi.org/10.30629/0023-2149-2020-98-8-565-573.

[36]S. Anichkov, 'Znachenie Pavlovskih metodov dlya farmakologii', *Klinicheskaya Meditsina*, 7 (1951), 7–11.

[37]*Ibid.*

[38]*Ibid.*

[39]*Ibid.*

[40]Vasiliy Zakusov (1903–1986) was the Editor-in-Chief of the *Pharmacology and Toxicology* journal in the beginning of the 1950s. He was arrested in 1953 during the so-called Doctors' Plot (Delo Vrachej).

[41]Vasiliy V. Zakusov, *Farmakologiya nervnoy systemy* (Leningrad: Medgiz, 1953), 3.

[42]*Ibid.*, 4.

[43]*Ibid.*

[44]*Ibid.*, 86.

dosage, and side effects.[45] In this connection, the bromides were also underlined, in the application of which Pavlov and his collaborator Maria Petrova had a special interest.[46] Zakusov pointed out the combination of bromine with caffeine, which was also used by Pavlov in his experiments dosing them depending on the patient's type of nervous activity. Zakusov's book about pharmacology of the nervous system was used and cited not only in the USSR but also in Bulgaria and other countries in next decade.

Sleep therapy entering the clinic

Hypertension

Hypertension was explained by the occurrence of a local stagnation of excitation in the area of vasoregulatory centres in the cerebral cortex and subcortex. This explanation was based also on the concept of Georgij F. Lang (1875–1948) about the aetiology of hypertension (especially in its initial period) as a neurosis.[47]

In June 1951, an All-Union conference on hypertension was held in Leningrad, followed by a conference in Ryazan with 600 participants, both dedicated to the development of the Pavlovian teaching on the nervous regulation of blood circulation and breathing, taking into account the influence of the cerebral cortex. Special attention in both events was paid to hypertension and vascular innervation, as well as to the pharmacology of the neural regulation. Alexander Myasnikov emphasised that the cortical theory of hypertension advanced by the Soviet therapeutic school was confirmed, as well as the nervous mechanism of climacteric hypertension.[48] The vascular reactions of patients with hypertension were presented.[49] Scientists from different medical centres – Leningrad, Ryazan, Yaroslavl – shared their experience of using sleeping drugs in the treatment of high blood pressure. Aleksey Speransky shared the results of the treatment of 103 patients with hypertension with Luminal, chloral hydrate, and bromine preparations to eliminate disturbances in the processes of excitation and inhibition.[50] According to the instructions of Anatolii Ivanov-Smolenskii, who was supposed to be one of the first to use and spread sleep therapy in the USSR, drugs that affected the cortex and subcortical centres had to be applied for the treatment of hypertension: Luminal, pentothal, and the so-called 'Kerbikov's mixture'.[51] He used these drugs in psychiatric clinics for the treatment of schizophrenics but it was believed that they could be used also in the treatment of hypertension.[52] T. S. Istamanova from Leningrad also emphasised the ties between neuroses and internal diseases, especially heart diseases.[53] She recommended prolonged sleep, not a narcotic one, but natural sleep, and pointed out the different sensitivity to the use of bromine depending on the type of higher nervous activity. Again, in connection with clinical practice, Sergey N. Davidenkov recommended that the treatment had to respect the type of the patient's higher nervous activity and to explain to the patient the importance of overstrain of the nervous system and Pavlovian

[45] *Ibid.*, 85–91.

[46] *Ibid.*, 113.

[47] See G. F. Lang, *Gipertonicheskaya bolezn'* (Leningrad: Medgiz, 1950).

[48] A. L. Myasnikov, 'Patogenez gipertonicheskoy bolezni', *Klinicheskaya Meditsina*, 9 (1951), 26–32.

[49] A. Ya. Yaroshevskiy, 'Osobenosti sosudistykh reaktsii u bol'nykh gipertonicheskoy bolezn'yu', *Klinicheskaya Meditsina*, 9 (1951), 33–38. S. Kaminskiy experimented about eliciting pain to create vascular conditioned reflexes: S. D. Kaminskiy, 'Rol' tsentral'nykh mekhanizmov v razvitii gipertonicheskoy bolezni', *Klinicheskaya Meditsina*, 10 (1951), 11–18.

[50] I. P. Speranskiy, 'Lecheniye bol'nykh gipertonicheskoy bolezn'yu lekarstvennym snom, v zavisimosti ot sostoyaniye vysshey nervno deynosti', in A. L. Myasnikov et al. (eds.), *Lecheniye snom.* Trudy rasshirennogo zasedaniya Presidiuma akademii meditsinskih nauk SSSR s uchastiyem Ryazanskogo meditsivskogo instituta imeni Ivana Petrovicha Pavlova, 27–28.2 fevr. 1953 (Moscow, Medgiz,1954), 72–87.

[51] Oleg V. Kerbikov (1907–1965), a Soviet psychiatrist, was the head of the Department of Psychiatry at the Second Medical Institute in Moscow in the 1950s.

[52] Z. V. Lileyeva, 'Kombinirovannyy sposob primeneneiya snotvornykh preparatov pri lecheniye gipertonicheskoy bolezni', *Klinicheskaya Meditsina*, 9 (1951), 51–54.

[53] T. S. Istamanova, 'K. voprosu o nevrozakh v klinike vnutrennykh bolezney', *Klinicheskaya Meditsina*, 1 (1952), 16–23.

pathophysiology.[54] The protective inhibition should be reinforced with the help of extended sleep. Other influential researchers contributing to sleep therapy were G. F. Lang on the role of overexertion of higher nervous activity, Konstantin Bykov on cortico-visceral pathology, and Alexander Myasnikov, who also argued that in its initial phase hypertension was a neurosis, in which excitability of vasomotor regulation developed and a stagnant excitement appeared.[55]

Ulcer

The school of Konstantin Bykov, who headed the Pavlov Committee after the Moscow session, researched the so-called *interoreceptors* – the nerve endings of the internal organs. Experiments for building conditioned reflexes of the *interoreceptors* in order to use them in the treatment of internal diseases were conducted. According to Bykov, interoreceptive impulses did not reach the sphere of our consciousness, they were of pre-sensory type.[56] His concept about the aetiology of internal diseases and especially of ulcer was also based on *nervism.* The method developed by him and Ivan Kurtsin of ulcer treatment through prolonged sleep was considered a valuable contribution to Soviet science and to medical practice. It was recommended to be practised not only in city hospitals, but also in smaller regional hospitals.[57] The aim was to achieve 18–20 hours of sleep during 2–3 weeks through barbiturates or Luminal together with chloral hydrate.[58] After treating ulcer with Luminal, veronal, and medinal, to which 1–2% bromine solution was added, it was reported that patients noted a decrease in pain. In Leningrad, Luminal, Noctal, Nembutal, sodium bromide, etc., were also implemented.[59] The importance of considering the type of nervous activity of the patients when prescribing the medicines was underlined.[60]

Sleep therapy entered also children's clinics. In 1950, publications began to appear on the importance of the Pavlovian session for paediatrics and the use of sleep treatment in paediatric practice.[61] Nikolay Krasnogorsky was awarded the Stalin Prize (1952, 1st degree) for studying the nervous activity of children and implementing Pavlov's teachings in the clinic. The pressure for application of sleep therapy in the clinics intensified. Nikolay I. Leporski (1877–1952), a Pavlovian adherent since his youth, received the Union's award for the implementation of Pavlovian teaching in the research field of digestion in his monograph, *Diseases of the Pancreatic Gland*, with a view to clinical application in the hospitals.[62]

In the last days of February 1953, an extended meeting of the Presidium of the Academy of Medical Sciences of the USSR was held at Ryazan Medical Institute dedicated to sleep treatment. Experiences of clinical work in psychiatry, neurology, cardiovascular diseases, gastroenterology, etc., were exchanged. In the presentation of the method of healing sleep, along with the scientific physiological rationality and

[54]S. N. Davidenkov, 'Lecheniye bol'nykh nevrozami v svete fiziologicheskogo ucheniya Ivana Petrovicha Pavlova', *Klinicheskaya Meditsina*, 2 (1953), 16–28. See also L. T. Samoylova, 'Vliyaniye farmakologicheskikh i toksikologicheskikh veshchestv na uslovno-reflektornuyu deyatel'nost', *Zhurnal vysshey nervnoy deyatel'nosti*, 2 (1952), 8–23.

[55]A. L. Myasnikov, *Gipertonicheskaya bolezn'* (Moscow: Medgiz, 1954). L. I. Aleksandrova et al., 'Nevrologicheskaya kharakteristina nachal'nykh faz gipertonicheskoy bolezni', *Klinicheskaya Meditsina*, 9 (1953), 43–49.

[56]K. M. Bykov and I. T. Kurtsin, 'Kortiko-vistseral'nyye vzaimootnosheniya v norme i patologii', *Klinicheskaya Meditsina*, 9 (1951), 12–26.

[57]K. A. Mayanskaya, V. I. Korolev, and R. S. Fazlullina /Kazan'/, 'Sedativnyye sredstva pri yazvennoy bolezni', *Klinicheskaya Meditsina*, 7 (1951), 18–21.

[58]*Ibid.*

[59]A. A. Chaykova and L. A. Zalezskaya, 'Opyt lecheniya snom bol'nykh yazvenoybolzn'yu v usloviyakh rayonnoy bol'nitsy', *Klinicheskaya meditsina*, 11 (1951), 53–56.

[60]N. S. Molchanov, 'Lecheniye snom bol'nykh yazvennoy bolezn'yu', in A. L. Myasnikov et al. (eds.), *Lecheniye snom*, Trudy rasshirennogo zasedaniya Presidiuma akademii meditsinskih nauk SSSR s uchastiyem Ryazanskogo meditsivskogo instituta imeni Ivana Petrovicha Pavlova, 27–28 fevr.1953 (Moscow: Medgiz,1954), 88–99.

[61]A. B. Volovik, 'O Pavlovskikh ideyakh v pediatrii', *Voprosy pediatrii i okhrany materinstva i detstva*, 5 (1950), 3–7; S. G. Gimmelfarb, 'Lecheniye infektsioznoy khorei dlitelnym snom', *Voprosy pediatrii i okhrany materinstva i detstva*, 4 (1950), 3–5. V. M. Syrnev, 'O nekotorykh prakticheskikh vyvodakh iz ucheniya Iv. P. Pavlova i yego shkoly', *Voprosy pediatrii i okhrany materinstva i detstva*, 5 (1950), 30–33.

[62]N. Leporskij, *Bolezni podzheludochnoy zhelezy* (Moscow: Medgiz, 1951).

experimental evidence, the general materialistic and philosophical foundations of the Pavlovian teaching were pointed out. The basic philosophical principle that the first characteristic of matter was irritability, as well as the unity of the living organism with the environment was underlined, in opposition to 'Western science and practice'.[63] This basic ideological commitment to materialism made it difficult for the medical experts taking part in the conference to express critical distance to sleep therapy and the treatment methods associated with it.

Problems of the practical sleep therapy

As early as 1953, it was reported that the treatment with sleep, justified by Pavlov and resulting from his teaching on preventive inhibition, had sufficiently entered medical practice. But it was considered insufficiently developed as a methodology.[64] As a result of the accumulated experience, some restrictions were introduced in the application of sleep therapy by the Ministry of Health. The instructions emphasised that the physiological conditioned reflex sleep was an undoubtedly powerful therapeutic tool, although sleep therapy was not recommended in cases of heart attack, for example.[65] The combination of Luminal and chloral hydrate was widely used, but practical questions were raised by different hospitals which practiced this treatment. B. Andreev described a treatment in May 1951: The first days they gave Luminal and chloral hydrate, and the sleep curve fluctuated between 7 and 13 hours. All irritants had to be removed, replacing them with factors that facilitated the inhibition process. In the course of the therapy, the sleep time of the patients gradually decreased. The question was, should the sleeping pill dosage be increased in such cases?[66]

Other experimenters tried to support the effects of insulin and Luminal with conditioned stimuli. Because of the toxic effects of narcosis, the latter was recommended to be used only in psychiatry, and the prolonged natural sleep had to be encouraged. The instability of conditioned reflexes induced by pharmacological substances such as Luminal or insulin was indicated, which made their clinical application problematic.[67]

In Dnipropetrovsk, ulcer was treated with sodium bromide, which had to restore the balance between the processes of excitation and inhibition in the cerebral cortex, enhancing the inhibition process. The conclusion was that the application slowed down motor function and normalised it.[68] One of the important trends was to adapt the treatment depending on the type of neural activity of the patient, which explained the success or lack of results of the therapy. In Saratov, they conducted an experiment with 60 hypertensive patients, whereby narcotic sleep was used with eight patients, and with the rest, conditioned reflex sleep. Treatment was carried out depending on the patient's type of nervous activity.[69] On another group of hypertensives, a prolonged medicated sleep with Barbamil was applied three to four times a day.[70] Some authors, without disputing sleep therapy,

[63]I. G. Yeroshkin, 'O filosofskikh osnovakh ucheniya I. P. Pavlova', *Klinicheskaya meditsina*, 3(1952), 3–11. A. L. Shlyakhman, 'Materialisticheskiye osnovy Pavlovskoy fiziologii', *Klinicheskaya meditsina*, 3(1952), 12–16.

[64]B. V. Andreyev, 'Nekotoryye dannyye o dinamike lechebnogo sna', *Klinicheskdya Meditsina*, 4 (1954), 74–77.

[65]I. A. Chernogorov and others, 'Opyt primeneniya lekarstvennogo sna pri ostroy nedostatochnosti venechnogo krovoobrashcheniya', *Klinicheskaya Meditsina*, 1 (1952), 18–23.

[66]*Ibid.*

[67]K. G. Nikulin et al., 'Klinicheskoye znacheniye podkrepleniya uslovnogo refleksa na insulin i lyuminal malymi dozami bezuslovnogo razdrazhatelya', *Klinicheskaya Meditsina*, 5 (1953), 52–55.

[68]O. S. Parkhomenko, 'Ob izmeneniyakh dvigatel'noy funktsii zheludka u bol'nykh yazvennoy bolezn'yu pod vliyaniyem bromistogo natriya', *Klinicheskaya Meditsina*, 5 (1953), 56–59.

[69]G. P. Zhivotova, 'Osnovnoy obmen pri gipertonicheskoy bolezni i yego izmeneniya pod vliyaniyem terapii okhranitel'nom tormozheniyem', *Klinicheskaya Meditsina*, 5 (1953), 60–66. I. Subotnik et al., 'Elektroyentsefalograficheskiye issledovaniya pri gipertonicheskoy bolezni', *Klinicheskaya Meditsina*, 5 (1953), 66–74.

[70]S. Kh. Sidorovich, 'Vliyaniye dlitel'nogo prerivystogo medikamentoznogo sna na bol'nykh gipertonicheskoy bolezn'yu /po dannym elektrokardiografii/', *Klinicheskaya Meditsina*, 6 (1953), 90–91.

opposed the use of a combination of barbiturates and bromine for prolonged therapeutic sleep.[71] Nerve-vegetative changes were also reported as consequences of sleep therapy.[72]

The Moscow experience increasingly emphasised the role of the individual characteristics of the patients. The instructions for drug treatment of hypertension, developed by the Institute of Therapy of the USSR Academy of Medical Sciences, as well as Alexander Myasnikov's article on sleep therapy, also stressed that patients responded differently to the therapy. The differences were explained also according to the Pavlovian teaching about the nervous activity type: 'The application of medical sleep is incompatible with the general appointment of sleeping pills, without taking into account the peculiarities of the higher nervous activity of the patients'.[73] It was necessary to study the type of individual nervous processes, to protocol the sleep, and to test small doses of sleeping pills – Nembutal and Barbamil – in which the patient's sleep after these doses was registered with an actograph instrument and observed. A detailed scheme of examination of the individual higher nervous activity of the patient was recommended in order to be filled in and signed not only by the attending physician, but also by a neuropathologist and a physiologist.[74] Treatment had also to be based on the patient's neurological status. Other factors that had to be studied were the strength and mobility of nervous processes – of the inhibition process – the patient's emotional reactions, as well as the balance of the 'signalling systems', the figurative thinking, the peculiarities of speech, and associative experiments. A physical therapist had to fill in the data on motor reactions and the formation of motor stereotypes.[75]

The administering of sleep therapy in the clinic raised a lot of questions. Although they did not challenge the Pavlovian teaching and the questions were formulated in its vocabulary, they articulated some of the negative results of the implementation of this treatment. As a result, its application was reduced in 1953 for some diseases or detailed, depending on the type of nervous activity according to Pavlovian classification.

Sleep therapy traveling to Bulgaria

Sleep therapy was implemented in hospitals all over the Eastern Bloc as a part of the Sovietisation of medicine and public health. It affected the local medical systems in different ways depending on the medical schools, academic traditions, and political constellations in each country.

The Sovietization of Bulgarian medical science started with the return in 1944–1945 of doctors – political émigrés in the USSR – who in the following years occupied leading positions of power in medicine, especially when Dr. Petar Kolarov (1906–1966), a long-time émigré in the USSR, took the post of Minister of Public Health and Social Care in 1950. The tendency to implement the Soviet model of public health was intensified after the Fifth Congress of the Bulgarian Communist Party at the end of 1948, when Bulgaria adopted the Stalinist model of socialism. In 1948–1949, some leading doctors – Tasho Tashev, Lyuben Rachev, and others – were sent to the Soviet Union to observe and study Soviet medicine.

The materials from the so-called Pavlovian session in Moscow were translated and published in Bulgaria immediately after its end in the summer of 1950. Communist philosophers Todor Pavlov[76] and

[71]B. V. Andreyev, 'O tseles'obraznosti naznacheniya broma pri terapii snom', *Klinicheskaya Meditsina*, 9 (1953), 64–70.

[72]L. I. Fishcher, 'Nervno-vegetativnyye sdvigi pri lecheniyem snom bol'nykh gipertonicheskoy bolezn'yu', *Klinicheskaya Meditsina*, 9 (1953), 67–71.

[73]A. A. Zhgun and P. V. Simonov, 'Znacheniye individual'nykh osobenostey vysshey nervnoy deyatel'nosti bol'nogo pri vybore metoda lecheniya snom', *Klinicheskaya Meditsina*, 10 (1953), 18–23.

[74]*Ibid.*

[75]*Ibid.*

[76]Todor Dimitrov Pavlov (1890–1977) was a Bulgarian philosopher – Marxist, member of the Bulgarian Communist Party since 1919. In 1932 he emigrated to the USSR and was a professor of dialectical materialism at the Institute of Red Professorship in Moscow. After 1945 he was a professor at Sofia University and President of the Bulgarian Academy of Sciences from 1947 to 1962. He wrote *Reflection Theory* (1936, 1945), in which he expounded the Marxist-Leninist theory of reflection and criticised 'bourgeois theories'.

Asen Kiselinchev, who held key positions in philosophy, responded with a series of articles and books.[77] The medical community issued a so-called Pavlov's Volume, which included, along with the medicine authors, also the philosopher Asen Kiselinchev.[78] A Pavlov's Committee was appointed following the Moscow model, which developed curricula and teaching materials for doctors to study Pavlov's teaching.[79] The scientific periodicals published by the Bulgarian Academy of Sciences, the Ministry of Public Education, the Ministry of Public Health, and the Medical Academy immediately aligned their research topics with this official doctrine.[80]

The name of Ivan P. Pavlov as a renowned physiologist was well known in the Bulgarian scientific community during the prewar decades. His concept of sleep as inhibition was also presented in 1934 by the young psychiatrist Nikola Shipkovensky (1906–1976) in his dissertation, *The Problem of Sleep*.[81] For the author, however, this was merely one of many theories, alongside those of other scholars, which he also discussed. About 15 years later physiology was expected to be grounded entirely in Pavlovian principles.

In 1947, an Institute of Experimental Medicine was established in Sofia (later on, Institute of Physiology) at the Bulgarian Academy of Sciences. Its director for more than 15 years was the physiologist Prof. Dimitar Orahovats[82] The institute was assigned central tasks to establish Pavlov's teaching, which included implementing Pavlov's research methods and experimental techniques, popularising Pavlov's biography, translating and publishing Pavlov's works, and popularising them through a program of lectures, seminars, and radio talks. The institute's task was also to experiment with dogs and other animals as well as to apply Soviet medical treatments in the clinical work. For the institute's experimental work, Soviet-style chambers for conditioned reflexes of humans, dogs, and small animals were built, and for experiments and clinical therapies, the departments of university and other hospitals were provided. Some young scientists were sent to the USSR to complete their doctoral studies. The scientific topics of the institute's collaborators in the first half of the 1950s were oriented towards the study of the higher nervous activity and the treatment of ulcers, hypertension, and infectious diseases with sleep. Some explicit ideological aims were added: the institute had to join the fight against the 'reactionary grasps of Western physiologists – behaviorists, psychosomatics and others'.[83]

For most doctors and scientists, the new guidelines imposed by the authorities in science and clinical therapy required an important change in their professional habitus. The inherited hierarchies and authorities were challenged. Leading doctors such as Prof. Konstantin Chilov[84] were criticised for not implementing Pavlov's teaching; Dimitar Orahovats, as head of the Institute for Physiology, took responsibility for the establishment of this teaching, without himself being involved in this research paradigm; young doctors selected for specialisation in the USSR such as Lyubomir Tomov[85] and Anna

[77]See Todor Pavlov, *Osnovnoto v uchenieto na I. P. Pavlov v svetlinata na dialekticheskiya materializam* (Sofia: BAS, 1956). The book was also translated into Russian.

[78]Tsvetan Kristanov (ed.), *Pavlovski sbornik*, vol. 2 (Sofia: BAS, Institute of Clinical and Social Medicine, Institute of Philosophy and Pedagogical Institute, 1953).

[79]Pavlovski komitet, *Kurs po Pavlovskoto uchenie za lekari. Tezisi* (Sofia, Nauka i izkustvo,1954).

[80]See also the course of the journal *Narodna prosveta* (*People's Education*) 1954–1956, where numerous articles were published on the application of the teachings of Ivan Petrovich Pavlov in the education.

[81]Nikola Shipkovensky, *Problemat za sanya* (Sofia: Kultura, 1934).

[82]Dimitar Orahovats (1892–1963) studied in Germany and was a physiologist who served as the first director of the Institute for Experimental Medicine, later the Institute of Physiology.

[83]Scientific Archive of the Bulgarian Academy of Sciences, h. 72, inv. 1, a.u. 35, sheet 15.

[84]Konstantin Chilov (1898–1955) studied in Sofia and Vienna. After the Second World War, he was the head of the Internal University Clinic in Sofia. Among his topics were hypertension and cardiovascular diseases.

[85]Lyubomir Tomov (1914–?) completed his doctoral studies in Leningrad under G. F. Lang between 1946 and 1949 and became an assistant professor at Konstantin Chilov's clinic (1950). He became Communist Party Secretary in the Medical Academy as well as dean and vice-rector of the Academy in the following years. Since 1972, he has headed the section on aging problems at the Department of Gerontology and Geriatrics at the Medical Academy; since 1977, he has been chairman of the Cardiorheumatological Society in Bulgaria.

Varbanova[86] became leaders of this process. In the first half of the 1950s, they planned experiments, published papers about Pavlov's teaching, and held lectures about it.

Already in 1949, an entire booklet of the *Medical Review* journal was devoted to Soviet medicine, containing articles on individual medical sciences and practices.[87] The editor-in-chief emphasised that Soviet medicine was radically different from the medicine of the past, being independent, qualitatively new, and experimentally proving the material nature of the psychic phenomena.[88] In his article, the leading paediatrician Lyuben Rachev described the Soviet children's hospitals and institutions for children he had visited.[89]

On 9 October 1950, a Bulgarian-Soviet medical week was solemnly opened,[90] for which a Soviet delegation headed by N. A. Vinogradov[91] – one of Stalin's personal doctors – came to Sofia. The week was held throughout the country under the motto 'Brotherly greeting to the Soviet guests – representatives of the most progressive medical science in the world'.[92] Prof. Dmitriy Andreevich Biryukov, Director of the Leningrad Institute of Experimental Medicine, delivered a keynote 'Ivan Petrovich Pavlov's teaching on *nervism*'.[93] After the meetings, the official Ministry of Public Health newspaper Zdraven Front ('Health Front') appealed that 'Lessons from the Bulgarian-Soviet Medical Week must become a weapon of action for our health workers!'[94] and that 'The adoption of the Soviet experience is the main duty of every medical worker!'[95] The newspaper published detailed information about Soviet health care.[96]

At the end of 1951, a large-scale Pavlovian session was held in Sofia, in which experts from all medical sciences participated.[97] Some of the professors were accused of supporting Soviet scientists blamed for deviating from the Pavlovian teaching (Leon Orbeli, Lina Stern) and had to engage in public self-criticism.[98] Prof. Konstantin Chilov, previously criticised for not implementing Pavlovian methods, promised to rebuild his work in 'Pavlovian style'.[99] The session decided to create a Pavlovian Committee in Bulgaria and to draw up the research plans of the medical institutes in close connection with the Academy of Medical Sciences of the USSR. Like in the Soviet Union, Bulgarian scientific institutions adopted the elements of the Stalinist time Communist Party rituals: public criticisms and self-criticisms, political promises and reports, etc.[100]

At the same time, in December 1951, the Soviet nomenclature of diseases and causes of death was introduced in Bulgaria.[101] The adoption of the Soviet medical terminology also facilitated the implementation of the therapeutic methods accepted in the USSR.

---

[86]Anna Varbanova (1922–2001) completed her doctoral study in Moscow under Konstanin Bykov in the 1950s; in the 1960s, she continued to work using the methodologies of the Pavlovian school; from 1976 to 1988, she was the Director of the Institute for Brain Studies (former Institute for Physiology).

[87]Editorial, *Lekarski Pregled* , 6–8 (1949), 1.

[88]Zdravko Mitsov, 'Savetskata meditsina', *Lekarski Pregled*, 6–8 (1949), 3–32.

[89]L. Rachev, 'Postizheniya na pediatriyata v SSSR', *Lekarski Pregled*, 6–8 (1949), 144–139.

[90]Yu. Toshev, N. Kalpchiyev, 'Tarzhestveno otkrivane na balgaro-savetskata meditsinska sedmitsa', *Zdraven Front*, 31 (10 October 1950), 1.

[91]Nikolay Vinogradov (1910–1977). After 1940 Deputy minister for Public Health, 1959 – 1962 Minister for Public Health.

[92]'Bratski privet na savetskite gosti – predstaviteli na nay-progresivnata meditsinska nauka v sveta', *Zdraven Front*, 31 (10 October 1950), 1.

[93] *Dmitriy Biryukov, Uchenieto na Ivan Petrovich Pavlov za nervizma, Savremenna Meditsina*, 5-6(1950), 5-32.

[94]*„Usvoyavaneto na savetskiya opit e osnovno zadalzhenie na vseki meditsinski rabotnik!"* , *Zdraven Front*, 32, October 17 (1950), 1.

[95]'Poukite ot balgaro-savetskata meditsinska sedmitsa tryabva da stanat orazhie za deystvie na nashite zdravni rabotnitsi', *Zdraven Front*, 33, October 24 (1950), 1.

[96]N. A. Vinogradov, Osnovni printsipi na savetskoto zdraveopazvane, *Zdraven Front*, 32 (October 17 1950), 2–3.

[97]'Pavlovska nauchna sesiya', *Zdraven Front*, 1 (6 January 1952), 1.

[98]Self-criticism was expressed by the psychiatrist Kiril Cholakov, as well as by his colleague G. Uzunov, both accused of being followers of Lina Stern.G. Uzunov, 'Zaklyuchitelno izkazvane na prof. G. Uzunov', *Zdraven Front*, 6 (13 February 1952), 3.; Kiril Cholakov, 'Zaklyuchitelno izkazvane na prof. Kiril Cholakov, 4 (30 January 1952).

[99]Konstantin Chilov, 'Zaklyuchitelno izkazvane na prof. Konstantin Chilov', *Zdraven Front*, 5 (6 February 1952), 2.

[100]See Alexei Kojevnikov, 'Games of Stalinist Democracy: Ideological discussions in Soviet sciences 1947-52', in Sheila Fitzpatrick (ed.), *Stalinism. New Directions* (London and New York: Routledge, 2000), 142–176.

[101]See Zhana Golemanova, *Izgrazhdane na osnovite na socialisticheskoto zdraveopazvane v Bulgaria* (Sofia: Meditsina i fizkultura, 1987), 177.

Under the rubric 'Let's implement the Pavlovian teaching', the *Zdraven Front* newspaper published abundant information and photographs about the courses on the Pavlovian teaching for nurses, midwives, doctors, and dentists, as well as about its application in the medical institutions.[102] The academic research activity was also oriented towards the decisions of Pavlov's session: A wave of physiological experiments using Soviet methods began in medicine, pedagogy, and sports. The Higher Medical Institute in Plovdiv was named after Ivan Petrovich Pavlov. Following the Soviet model, nurses' conferences were held at which the importance of the Pavlovian teaching for the nurses' work was discussed. Doctors and nurses took individual promises[103] to study the works of the famous physiologist. In the Medical Academy in Sofia in the fall of 1950, with the beginning of the school year, the organisation of courses for studying the Pavlovian teaching began.[104] As early as 19 October 1950, the Ministry of Public Health sent a letter to the Medical Academy to organise a course of lectures for the professors of the academy – regularly from December to April – with lectures and seminars. On the same program, lectures and seminars were held with sixth-year students in medicine who had already completed the main course of study. In the following academic year, 1951/1952, the courses continued under strict control.[105] Thousands of physicians who graduated between 1950 and 1956 in Sofia and Plovdiv, as well as nurses in their schools, were indoctrinated in those seminars. Even the foreign language courses for medical students were adapted to present Pavlov's theory and sleep therapy.[106]

In October 1951, the department of propaedeutics of internal diseases distributed a set of study materials – each of the assistants at the clinic, led by Prof. Konstantin Chilov, had to study for 10 months two volumes by Pavlov and Konstantin Bykov and other authors.[107] The academic year was divided into weekly slots to study the works of Konstantin Bykov, Anatolii Ivanov-Smolenskii; about 30 pages per week were planned for reading and discussion. The assistants had to keep a diary with notes, which they had to present to the head of the department at the end of the month. Once a month, the studied material had to be discussed at the seminars.[108] Three times a month abstracts of the periodical scientific Soviet literature were discussed.

A dictionary of medical terminology published in 1950 was criticised for underestimating Soviet science.[109] A critical review was also published of Konstantin Chilov's article 'On the etiopathogenesis of hypertensive disease'[110] for not implementing Pavlov's physiology in the etiopathogenesis, and 'the ideas of the great Russian materialist were not woven like a red thread' in the article.[111] According to the critics, a 'mischievous fascination and adoration' for (West)European authors was shown.[112]

[102]'Pavlovskoto uchenie se vnedryava v praktikata', *Zdraven Front*, 4 (30 January 1952); 'Po primera na savetskite meditsinski rabotnitsi, Nashite zdravni rabotnitsi izuchavat i vnedryavat Pavlovskoto uchenie', *Zdraven Front*, 3 (23 January 1952); 'Da vnedrim Pavlovskoto uchenie', 5 (6 February 1952); Silata na Pavlovskoto uchenie, 7 (20 February 1952), 1.

[103]The system of 'personal promises' to the Communist Party, to Stalin or Bulgarian Party leaders, prepared by mass organizations' members or participants in working collectives was a characteristic of the late Stalinist period. This was practiced on the occasions of political holidays or upcoming Communist Party congresses.

[104]Programme for studying the Pavlov's teaching. Central State Archive (CSA), h. 927, inv. 2, a.u. 15, sheet 69–70.

[105]*Ibid.*, 45.

[106]For example, the *German Language Textbook for Soviet Medical Students*, prepared by Sophia Naumovna Bondar' (1913–1994), started with a text about the importance of Pavlov's teaching for the theory and practice in medicine and continued with a text about the healing power of sleep: 'Die Bedeutung der Lehre Pawlows fuer die Theorie und Praxis der Medizin; Schlaf des Gehirns bringt Heilung', in S. N. Bondar' (ed.), *Khrestomatiya na nemetskom yazyke dlya medikov* (Moscow: Medgiz, 1958), 5–16. This textbook was used also by Bulgarian students.

[107]*Ibid.*, 56.

[108]*Ibid.*, 61.

[109]A. Atanasov, 'Review of "Meditsinska terminologiya i klinichen rechnik" by Shipkovenski, Galabov, Rachev'. *Savremenna Meditsina*, 5–6 (1950), 99–100.

[110]K. Chilov, 'Za etiopatogenezata na hipertonichnata bolest', Meditsinski letopisi, 7 (1950), 657–667.

[111]M. Stoykov, 'Review of K. Chilov's article', *Savremenna Meditsina*, 10 (1951), 109–111.

[112]*Ibid.*

After the Pavlovian session in Sofia at the end of 1951, the implementation of Pavlov's ideas in clinical practice became a priority for the following years.[113] In March 1952, the first open scientific session of the Institute for Doctors' Specialization (ISUL) in Sofia was held.[114] Prof. Tasho Tashev (former personal doctor of the Communist Party Leader Georgi Dimitrov) and his collaborators presented a keynote 'On the treatment of peptic ulcer disease with sleep'. The research experimented with 41 ulcer patients who underwent sleep therapy in 1951 in the First Internal Clinic of ISUL in Sofia. The priority of sleep therapy over other methods of treating peptic ulcer disease was emphasised.[115] The young gastroenterologist Hristo Brailsky (1924–2004) started at the Medical Academy the implementation of sleep therapy on 60 patients with ulcers, primarily using Luminal and chloral hydrate. Some patients were administered large doses of these medications: 0.30–0.60 g. Luminal and 1.5 g. chloral hydrate daily.[116] Ulcer disease 'in the light of Pavlov's teachings' was also discussed in the Nurses' magazine.[117]

'Notices of the Institutes of Medicine', a publication of the BAS, explained the doctrine of *nervism.*[118] Here, again, Prof. Konstantin Chilov was subject to criticism.[119] The magazine quoted the minister, Dr. Petar Kolarov, that '…we, Bulgarians were still in the primary Pavlovian school' and there was also a danger of simplifying and vulgarising Pavlovian teaching in our country.[120] Tsvetan Kristanov from the Pavlovian Committee appealed for the implementation of the Pavlovian teaching in the clinic.[121] In order to support this process of adoption, the book about hypertension by G. F. Lang was translated and published in 1953, where he interpreted the hypertensive disease as neurosis.

In March–April 1953, medical universities held their own scientific sessions.[122] The types of nervous activity, sleep treatment for peptic ulcers, and other issues of the application of Pavlov's teaching were discussed. The articles in the medical press, the documents of scientific organisations, the plans for research work, and the clinical experience and experimental work traced the steps of the imposition of the new therapeutic methods.

The surgical clinic at the Department of Surgery at Medical Academy 'Valko Chervenkov' in Sofia worked on the implementation of the Soviet experience and Pavlovian physiology in surgery. It planned to research the 'Application of sleep therapy in abdominal surgical diseases in the preoperative and postoperative period' and the 'Sleep therapy in endarteritis Obliterans /M. Buerger /' presenting the primary importance of the neurogenic factor in all pathological changes in the body.[123] At the Institute for Doctors' Specialization (ISUL), the aspiration was to illuminate the main health problems in 'the spirit of the Pavlovian teaching and the great scientific achievements of Soviet medicine'. They stressed that their 'Studies on sleep therapy for peptic ulcer disease, hypertension, children's rheumatism and bacillary dysentery are a clear indication for the direction of our therapy along Pavlov's path'.[124] Research topics of the third internal clinic for heart diseases and rheumatism in 1953 included 'Treatment of hypertensive disease with sleep' which aimed to test the healing effect of sleep (medicinal and prolonged physiological) on hypertensive disease. In the children's clinic, 'complex therapy of dysentery with the

[113] *Editorial, Savremenna Medicina*, 1 (1953), 3.

[114] Central State Archive, h. 1305k, inv. 1, a.u. 243, sheet 1 – Theses of the reports for the first open scientific session of ISUL, March 1952.

[115] *Ibid.*

[116] Hristo Brailsky, *Lechenie na yazvenata bolest sas san* (Sofia: Nauka i izkustvo, 1955), 170.

[117] A. T. Raynov, 'Yazvenata bolest v svetlinata na Pavlovoto uchenie', *Sreden Meditsinski Rabotnik*, 4 (1952), 12–15.

[118] D. Paskov, 'Uchenieto na Ivan Petrovich Pavlov za Visshata nervna deynost', *Izvestiya na Meditsinskite Instituti*, 1 (1951), 3–32.

[119] *Kiril Cholakov, Retsenziya za sbornika na BAN "Nervizmat i klinikata", Izvestiya na meditsinskite instituti*, 2 and 3 (1951), 254–261.

[120] Velko Makedonski, 'Pavlovskata sesiya v Balgariya prez 1951 g.', *Izvestiya na Meditsinskite Instituti*, 4–5 (1951), 352–359.

[121] *Ibid.* See also Tsvetan Kristanov, 'Dialektiko-materialisticheskiyat harakter na uchenieto na Ivan Petrovich Pavlov za visshata nervna deynost', *Izvestiya na Meditsinskite Instituti*, 6 and 7 (1952), 3.

[122] V. Petkov, M. Doynov, 'Nauchnite sesii na meditsinskite vuzove prez 1953 g. mart – april 1953', *Savremenna Meditsina*, 6 (1953), 3.

[123] Central State Archive, h. 160, inv. 14, a.u. 47, sheets 13–20.

[124] Central State Archive, h. 160, inv. 14, a.u. 52, sheet 2.

inclusion of prolonged interrupted physiological sleep' was planned.[125] In the first days, medicated sleep through Luminal was prescribed with a gradual transition to conditioned reflex sleep. A group of 40 child patients was treated with sleep, and a control group of 40 patients with ordinary treatment. The second theme of the children's clinic was 'A Complex therapy of rheumatism and chorea with the inclusion of prolonged interrupted physiological sleep'. Children had to be treated with sleep through Luminal and chloral hydrate. The duration of sleep had to be 14–18 hours, and 20 children with rheumatism and 10 with chorea were planned to be included.

Sleep therapy for children with rheumatism

Rheumatism as a socially significant disease received considerable attention. The treatment of this disease, in the past, had gone through various forms until the application of salicylic, aspirin, and sulfasalazine, as well as cortisone became standard.[126] In 1950, Philip Hench was awarded the Nobel Prize for his cortisone research.[127] In some states (German-speaking area), this treatment was related also to balneology.[128] It was generally accepted that good sleep had positive effects.

In the years after the Second World War in the USSR, it was reported that the number of rheumatism patients exceeded the number of those suffering from tuberculosis. In 1948, on the initiative of the member of the Academy Anatolij Nesterov, the Ministry of Health of the USSR issued an order 'On measures to strengthen the fight against rheumatism in the USSR'. Cardio-rheumatology dispensaries and rheumatology centres in polyclinics were established. In the search for treatment, experimental work in laboratories inducing arthritis and myocarditis in dogs and trying to treat them was expanding.[129]

After the Pavlovian session, the aetiology of rheumatism was explained according to Pavlov on the basis of *nervism*.[130] 'The new, Pavlovian approach to disease entities in particular and to pathological processes in general cannot and should not pass by…' – Bulgarian authors wrote in their article 'Rheumatism and Nervous System'. They indicated increased excitability of the subcortical nerve centres and symptoms of 'undoubtedly nervous origin', as well as pathological changes in the central and peripheral nervous system.[131] Using Soviet experimental methods (Kurtsin, Ivanov-Smolensky), they set themselves the task to identify the relationship of the illness and its treatment with the type of nervous system of 49 patients, the strength and mobility of nervous processes, and the disorders in the higher nervous activity.[132]

In 1953, Prof. Lyuben Rachev, head of the Department of Children's Diseases at the Medical Academy, led a study of the application of sleep therapy in rheumatic children. Its purpose was to implement the Soviet experience in Bulgarian clinical practice. The experiment was based explicitly on the Pavlovian teaching, which served as a basis for explaining the aetiology of the disease as well as for the treatment. Sleep was explained as a process of inhibition: 'I. P. Pavlov gave explanations of sleep as an inhibition process spread over the entire cortex of the large hemispheres and other lower parts of the brain. Pavlov and his students emphasised sleep as a protective inhibition process with a biologically

[125]*Ibid.*, sheet 26.

[126]Francis Dudley Hart, 'History of Treatment of Rheumatoid Arthritis', *British Medical Journal*, 1, 6012 (27 March 1976), 763–765; https://www.jstor.org/stable/20409202; Katherine S. Upchurch and Johnathan Kay, 'Evolution of Treatment of Rheumatoid Arthritis', *Rheumatology*, 51, 6 (December 2012), 28–36; https://academic.oup.com/rheumatology/article/51/suppl_6/vi28/1787530; Michael van der Heuvel, 'Geschichte der Rheumatherapie: vom Mythos zur Evidenz', 2019, https://ptaforum.pharmazeutische-zeitung.de/vom-mythos-zur-evidenz/;

[127]Hart, *op. cit.* (note 126).

[128]https://dgrh.de/Start/Publikationen/Historie-der-DGRh/90-Jahre-DGRh/Rheumatologie-in-Ost-und-West.html.

[129]S. Pisarev, 'Rolyata na TSNS v patogenezata na eksperimentalniya artrit i miokardit', in Iv. Penchev and St. Todorov (eds.), Treti nauchen kongres na balgarskite lekari, (Sofia: Nauka I izkustvo 1955), 483–487.

[130]Em. Atanasov, St. Nikolov, M. Matev, and Ves. Oreshkov, 'Revmatizam i nervna sistema /kliniko-eksperimentalni izsledvaniya/', 30 December 1956. 20 pages, typescript. Sofia State Archive, h. 927, inv. 1, a.u. 346, sheets 1–20.

[131]*Ibid.*

[132]*Ibid.*

protective nature. I. P. Pavlov wrote: "The nerve cell possesses high reactivity, and therefore rapid functional destructibility, rapid fatigue". And further: "during the inhibition period, being free from work, the cell restores its normal composition"'.[133] It was indicated that rheumatic patients had reduced excitability of the cerebral cortex and increased excitability of the autonomic nervous system. The cited Soviet authors found in children suffering from rheumatism an increased irritability, a decrease in the mobility of nervous processes, and a rapid exhaustion of cortical cells.[134] This determined the application of sleep therapy by Soviet doctors, including for children with rheumatic diseases, as the most harmless and close to the physiological state of the body.[135]

The Bulgarian doctors conducted a series of sleep therapy trials with several groups of school-aged children, with a control group without sleep therapy for comparison. The average duration of sleep they achieved was 13–16 hours a day, while the average duration of sleep by healthy children was considered to be normally 9–12 hours. The description of the experiment revealed that the new therapy still lacked proper equipment and conditions, as well as trained medical personnel. Luminal 0.05 g. was used as a sleeping medicine, increased in some individual cases, and in five children the Soviet drug Amytal-sodium was administered in the same doses. The doctors' team did not use chloral hydrate in the enema, as applied by Soviet authors, because it could cause disturbances. According to the reports, all children tolerated these sleeping pills well. Identifying the type of nervous activity of the children, however, proved to be very difficult.[136] The text which described the experiment presented also specific cases: an 8-year-old child, Margarita, hospitalised in July 1953 with pain and swelling of the joints of the hands and legs, was placed in the sleep therapy room from the first day for a month. She was given Luminal three times at 0.05 g. and an added bromine-caffeine therapy. On the 20th day, her condition visibly improved and after a week she could be discharged. Blood count, temperature, and other indicators also had shown improvement. Another child, 11 years of age, was similarly treated, also showed improvement, and in the third week conditioned reflex sleep was produced. According to the report, all children were discharged with improvement; there were no cases of deterioration.[137] Without mentioning any side effects of the treatment, the authors argued that the experiment proved that sleep therapy was successful for rheumatism treatment of children.

The Third Congress of Bulgarian doctors in 1954: questioning the sleep therapy

The results of the experiment with children with rheumatism were presented by Luben Rachev's team at the Third Congress of Bulgarian Doctors in October 1954, where rheumatism and its treatment was one of the main Congress topics. This Congress, dedicated to the problems of tuberculosis, rheumatism, hypertension, and coronary disease,[138] practically summarised the results of the intensive application of Pavlovian methods in the clinic. It was representative in this respect, because in addition to the Bulgarian participants, delegates of seven other countries also participated: the USSR, the GDR, Poland, Albania, Czechoslovakia, Romania, and People's Republic of Korea. In the reports and speeches of the Congress, *nervism* was given an important place, but along with it, other interpretations of the aetiology of diseases were also admitted. In the report about rheumatism it was pointed out that it was still not clear to what extent the nervous system was involved in the pathogenesis of the illness.[139] The keynote report on

[133] *Ibid.*
[134] *Ibid.*
[135] *Ibid.*
[136] *Ibid.*
[137] Sofia State Archive, h. 927, inv. 1, a.u. 176, sheets 1–12.
[138] Third Scientific Congress of Bulgarian Doctors, Sofia, 28–30 October 1954. Abstracts were published in English in the Congress's volume; that way the titles are cited according to the publication in order to keep the original translation.
[139] V. T. Tsonchev, N. Mavrodinov, T. Pilosof, L. Stanchev, G. Gizov, T. Todorov, and Yu. Belov, 'Etiopathogenesis of Rheumatism', in Iv. Penchev and St. Todorov (eds.), Treti nauchen kongres na balgarskite lekari, (Sofia: Nauka I izkustvo 1955) 416–429 (in Bulgarian).

hypertension at the Congress was delivered by Prof. Alexi Puhlev. He expressed cautious scepticism about the *nervism*-based explanation of various diseases. Without denying the role of central nervous disorders, he asked why disorders of cortical processes caused hypertension in a certain individual, and not another disease – ulcer, thyrotoxicosis, or other – and concluded that the process has not been clarified. 'The pathogenesis of hypertonic disease was not completely solved and explained with the assertion that disease results from functional disturbances in the cortical processes. – he added'.[140]

Even clearer doubts about the efficacy of the Pavlovian explanation and treatment of hypertension with sleep therapy were expressed before the Congress by the Polish representative, Prof. Jerzy Jakubowski[141] in his paper dedicated to the long-term results of the implementation of the sleep therapy in Lodz in the treatment of hypertension, ulcer, bronchial asthma, and other diseases: 'Late [Long term] Results from sleep therapy in the treatment of hypertensive disease, gastro-duodenal, ulcer, bronchial asthma, and other diseases'.[142] He presented the results of his team's observations of 68 patients in Lodz treated with Luminal and Amytal sodium, whose sleep lasted 14–22 hours. Complaints of hypertensive patients quickly disappeared, so the immediate results proved to be better than other treatments. But during the long-term monitoring of the patients, it turned out that the symptoms and complaints soon reappeared, and four patients died of strokes and heart attacks.[143] In peptic ulcer disease, the results were similar – within a year the complaints returned in almost all patients. The general conclusion of Prof. Jakubowski was that 'this method does not affect the future of patients with peptic ulcer and hypertonic disease. After a short or longer period of improvement, the complaints reappear, and people with hypertensive disease can also develop complications'.[144] He concluded also that this method required a lot of effort from the hospital staff because it was not tolerated equally well by all patients.[145]

There were some long-term observations on patients in Bulgaria which also presented problems with the implementation of sleep therapy. Christo Brailsky published in 1955 the book '*Treatment of ulcers with sleep*'.[146] Despite his overall conclusion that sleep therapy was superior to previous conservative treatments for ulcers,[147] he noted that a significant part of the 60 patients treated with sleeping drugs experienced adverse effects, including headaches, a sense of heaviness, staggering, disorientation, partial amnesia, psychosensory disturbances, easy fatigability and suggestibility, slurred speech, among others.[148] Some were unable to tolerate the sound of the metronome used to induce sleep.[149] For these reasons, he emphasised the need to individualise the method.

Other researchers shared their experiences with sleep therapy expressing their negative results. The physiologist Dr. Mincho Zhekov experimented with animals on the influence of sleep therapy on the treatment of purulent infection.[150] He treated guinea pigs infected with staphylococci using bromides and sleeping pills. After that he reported to the Institute of Physiology that the treated animals suffered the infection more severely. 'This suggests that excluding the cortex does not always have a beneficial effect on the body's protection mechanisms', he concluded in his report.[151]

---

[140]Alexi Puhlev, 'Etiology and pathogenesis of hypertensive disease', in Iv. Penchev and St. Todorov (eds.), Treti nauchen kongres na balgarskite lekari, (Sofia: Nauka I izkustvo 1955), 555–573 (in Bulgarian).

[141]Prof. Jerzy Jakubowski (1887–1967) founded the Lodz School of Cardiology and was the first chairman of the Polish Society of Cardiology.

[142]Jerzy Jakubowski, R. Fenningsen, and M. Edelman-Lodz, 'Late results in the sleep treatment of hypertensive ballast, peptic ulcer disease, bronchial asthma and other diseases', in Iv. Penchev and St. Todorov (eds.), Treti nauchen kongres na balgarskite lekari, (Sofia: Nauka I izkustvo 1955), 612–615 (in Bulgarian).

[143]*Ibid.*

[144]*Ibid.*

[145]*Ibid.*

[146]Hristo Brailsky, *Lechenie na yazvenata bolest sas san* (Sofia: Nauka i izkustvo, 1955).

[147]*Ibid.*, 215.

[148]*Ibid.*, 39 –41

[149]*Ibid.*, 37.

[150]Scientific Archive of the Bulgarian Academy of Sciences, h. 72, inv. 1, a.u. 28, sheets 16–17, 45–56.

[151]Scientific Archive of the Bulgarian Academy of Sciences, h. 72, inv. 1, a.u. 28, sheets 45–56.

Lyubomir Tomov, who tried to implement the sleep therapy for hypertension in the internal clinic according to his research plan at the Institute for Physiology in 1951–1954, became increasingly cautious about its application. Although he did not openly oppose the therapy, he stated in his reports that he had not found enough suitable patients – that was why he did not finish his research.[152] Being a leading cardiovascular specialist over the following three decades until his retirement in 1979, he never returned to sleep therapy during his career.

The records of disease histories of the patients in the Sofia internal clinic reveal the sufferings some patients had to endure, described by the respective medical staff members in 1952. Most patients with hypertension were given as a standard medical treatment Luminal, sodium bromate, and papaverine (papaverine hydrochloride).[153] The use in the hospital documentation of terms like 'conditioned-reflex sleep', the implementation of metronome for causing the sleep, proved that in the very beginning of 1952 Pavlovian terminology and technology of sleep therapy were established in this clinic in Sofia.

To return to the case described at the beginning, the student Ivo V. after the 20-day treatment with Luminal, on 23 January slept about 14 hours, he staggered a lot, and his speech was very slow. On 24 January although taking Luminal 0.10 g. three times a day,[154] he had not slept since noon, was dizzy, and staggered when walking. Relaxed, but felt heavy on his head. On 28 and 29 January, he was not given sleeping pills, no staggering, blurred vision, calm, not thinking so much. On 30 January, Luminal 0.10 g. in the evening. After the sleep treatment, the blood pressure rose again. Still easily excitable, he couldn't calm down completely. On 1 February 1952, he was issued an epicrisis: neurological status – negative, easy irritability, insomnia; data on neurasthenia passing into psychasthenia.[155] The young man got an additional diagnosis[156] and was prescribed to live an appropriate lifestyle and to receive a mixture of caffeine, sodium bromate, and water – one tablespoon each three times a day.[157] Another case in this clinic was Nikola S., driver, 47 years old, who entered the clinic on 6 March 1952 with *Morbus hypertonici*, blood pressure 220/160. According to his disease's history he received Luminal and papaverine. At the beginning the patient slept well, was sleepy. After one week, his eyes were blurred, the light irritated him; on 21 March, he was conscious but did not recognise the subjects and the people. Three days later, he felt his head heavy; on 21 April, he slept well, but had dizziness when standing up and walking. Nikola left the hospital on 5 May 1952.[158] His case repeated most of the side effects of the treatment, which lasted about two months.

Conclusions

Although sleep therapy was the most widely spread practical consequence of the Pavlovian session, research on its implementation is in its early stage. The Pavlovian session influenced in a negative way not only the science but also the practical treatment in the USSR and Soviet bloc countries. Many experts were isolated from the international discussions and certain views of the Pavlovian teaching were embedded in dogmatic ideological postulates in which a lot of young medical specialists were trained. Meanwhile the neuroscience was further developed in different countries, researching neurons, synapses, neurotransmitters, etc., and the Pavlovian theory about conditioned reflexes, excitation, and inhibition balance remained an interesting part of the history of brain research. The sleep research made a significant progress with the endeavours of Nathaniel Kleitman and Eugene Aserinsky. With the invention of reserpine (1953) the treatment of hypertension also improved.

[152]Scientific Archive of the Bulgarian Academy of Sciences, h. 72, inv. 1, a.u. 24, sheets 45–46.

[153]Sofia State Archive, h. 2245, inv. 1, a.u. 52.

[154]According to V. Zakusov, the maximum daily dose of Luminal was 0,6 g. Zakusov, *op. cit.* (note 41), 86.

[155]*Ibid.*

[156]Pavlov was very interested in neurasthenia and psychosthenia and their aetiology and treatment. See Todes, *op. cit.* (note 16), 645.

[157]Sofia State Archive, h. 2245, inv. 1, a.u. 52, sheets 2–10.

[158]Sofia State Archive, h. 2245, inv. 1, a.u. 52, sheets 118–127.

From the distance of time, the mass implementation of sleeping pills in the therapeutic work was criticised by important Russian and Soviet scientists. The Russian physiologist Ilya Arshavskiy (who was persecuted during the 'Doctor's plot') wrote in his memoirs about the years after the Pavlovian session when sleep therapy was practiced:

> …In conclusion, I will say a few words about the harm of this session. It was declared that all medicine should be based on Pavlov's teaching, as well as pedagogy and biology. The method of sleep therapy became widespread. We do not know how much sleep therapy for adults cost. But sleep therapy for children had a very high price. Sleep was considered an effective form of therapy. Children were stuffed with Luminal and turned into oligophrenics. Who now commits to Pavlov's understanding of the nature of sleep? This practice had the most negative consequences for medicine. Barbiturates were given to children from the first weeks of life.[159]

Sleep therapy was promoted in the medical press and propagated in mainstream medical media as an innovative general treatment based on the healing effects of inhibition. However, the preserved hospital documents from daily practice reveal a more detailed and diverse picture of the therapy's actual effects on patients. While the articles in the press abound with positive accounts of sleep therapy's results, the hospital records, which contain individual patients' medical histories, present a contrast. When juxtaposed with the publications of that time, significant discrepancies emerge between the patients' conditions during and after the therapy, as reflected in their medical histories, and the official conclusions expressed by doctors in their published papers. This gap is due to politically imposed practices when doctors were encouraged – or pressed – to apply sleep therapy in order to fulfil their assignments. Prescribing the patients Luminal, chloral hydrate, or other sleeping medications in order to make them sleep 14–18 hours or more was ultimately influenced by political decisions and ideologisation of science but was justified by physiological scientific arguments and short-term experimental results. Thus most efforts were oriented towards the improvement of sleep therapy using barbiturates and bromides, although its results were not positive in a large number of cases. Patients (including children) had to suffer the consequences: blurred eyes, staggering, dizziness, etc. Alternative scientific theories of disease aetiology and alternative therapies became peripheral but started to be discussed again in the mid-1950s.

The sleep therapy for hypertension, ulcer, and rheumatism lost its importance in the USSR and in the Eastern Bloc as soon as it lost its active political support after Stalin's death although its actual removal took some years. After the VIII Physiology Congress in Kyiv in 1955 the Pavlovian Committee was dissolved together with its controlling functions over science institutes and hospitals.[160] The clinical results of the patients with hypertension, ulcer, and rheumatism, which doctors and nurses observed during the therapy, also had their importance for abandoning this practice. Nevertheless, this therapy remained in use in Soviet and East European psychiatry in the next decades.[161]

Acknowledgements. This research has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and research and innovation programme, project 'Taming the European Leviathan: The legacy of post-war medicine and the common good' (grant agreement no. 854503).

[159]I. A. Arshavskiy, 'O sessii "dvukh Akademiy"', *Repressirovannaya nauka*. V. 2. (SPb.: Nauka, 1994), 239–242.

[160]L. O. Klymenko, I. G. Strokina, *op. cit.* (note 13).

[161]See about GDR: Viola Balz, 'The Emergence of a New Concept of Effectiveness: Documentation Systems and Psychopharmaceuticals in East and West Germany, 1955–1985', *Pharmaceutical Historian*, 48, 2 (2018), 30–42, http://www.ingentaconnect.com/content/bshp/ph/2018/00000048/00000002; Viola Balz, 'Dietfried Müller-Hegemann oder psychophysiche Medizin à la Pawlow', in Bettina Hitzer and Alexa Geisthövel *Auf der Suche nach einer anderen Medicine. Psychosomatik im 20. Jahrhundert* (Frankfurt: Suhrkamp Taschenbuch Wissenschaft, 2019), 211–221.

Cite this article: Popova K (2025). The Soviet export of sleep therapy to the Eastern Bloc countries after the Pavlovian session in 1950. *Medical History* 69, 573–591, https://doi.org/10.1017/mdh.2025.10043