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Article

University Pharmacy: from the foundation to the Pandemic times of Covid-19

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The University Pharmacy Program (FU), from the Federal University of Rio de Janeiro (UFRJ), was created based on the need to offer a curricular internship to students of the Undergraduate Course at the Faculty of Pharmacy. Currently, it is responsible for the care of about 200 patients/day, offering vacancies for curricular internships for students in the Pharmacy course, it has become a reference in the manipulation of many drugs neglected by the pharmaceutical industry and provides access to medicines for low-income users playing an important social function. Research is one of the pillars of FU-UFRJ and several master and doctoral students use the FU research laboratory in the development of dissertations and theses. As of 2002, the Pharmaceutical Care extension projects started to guarantee a rational and safe pharmacotherapy for the medicine users. From its beginning in 1982 until the current quarantine due to the COVID-19 pandemic, FU-UFRJ has been adapting to the new reality and continued to provide patient care services, maintaining its teaching, research, and extension activities. The FU plays a relevant social role in guaranteeing the low-income population access to special and neglected medicines, and to pharmaceutical and education services in health promotion.

Keywords: School pharmacy. Patient care. Pandemic. Teaching. Research and extension.

INTRODUCTION

The pharmaceutical profession has undergone changes over time and the reason for changing all pharmaceutical teaching guidelines is the need to bring the students closer to the reality where they will work, as there is still a distance from them concerning social issues. Often the students have access to scientific knowledge, which is disconnected from the social problems that surround them. Thus, the curriculum of the pharmacist must be planned and carried out based on a very clear conception of how and where they will act (Carrillo, 1999; Pereira, Freitas, 2008).

In addition to acquiring technical and scientific knowledge, they must perceive the political situation and the social reality where they work, since, from there, they will be able to learn the meaning and the real conditions of the exercise of their work. Thus, they must not only act in the context of serving the community, and their performance must be broader, leading to the transformation of the community, demanding adequate health conditions for this population, and, if possible, making them aware of their rights. They must develop a collective and solidary vision of their work (Gaede, Souza, 2002).

The pharmaceutical sector in Brazil has predominantly commercial characteristics, with the need to reorganize the distribution and dispensation

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of drugs from the perspective of pharmacy as a health establishment, as determined by Brazilian health regulation (Brazil, 2014). It is the role of pharmacists to understand the relationships of laypeople and professionals with pharmacotherapy and to interfere in the culture of medicine consumption since they are fundamental inputs, too important to be reduced to a market product (Rozenfeld, 2008). Thus, these institutions must change this paradigm for better patient care and the safety of medicine users.

Due to these challenges, the Faculty of Pharmacy (FF) (FU-UFRJ), from the Federal University of Rio de Janeiro (UFRJ), has since 1986 implemented a Pharmacy School, also known as University Pharmacy (FU), a pharmacy that belongs to an Institution Higher Education (IES), located on the UFRJ campus, and which represents a model of health establishment (Sousa *et al.*, 2018; Nigro *et al.*, 2021). The FU follows the current regulations and guarantees the rational use of medicines to the population, and its main objectives are to provide students with knowledge through professional experiences, as well as to make services available to the internal and external community, and to offer to the medicine user's comprehensive pharmaceutical assistance (Rossignoli, Correr, Fernández-Llimós, 2003; Nigro *et al.*, 2021). In the FU, about 4,000 prescriptions are dispensed monthly, and approximately 52,000 / year patients are served. The chronological trajectory of FU-UFRJ's teaching, research and extension actions is described in Figure 1.

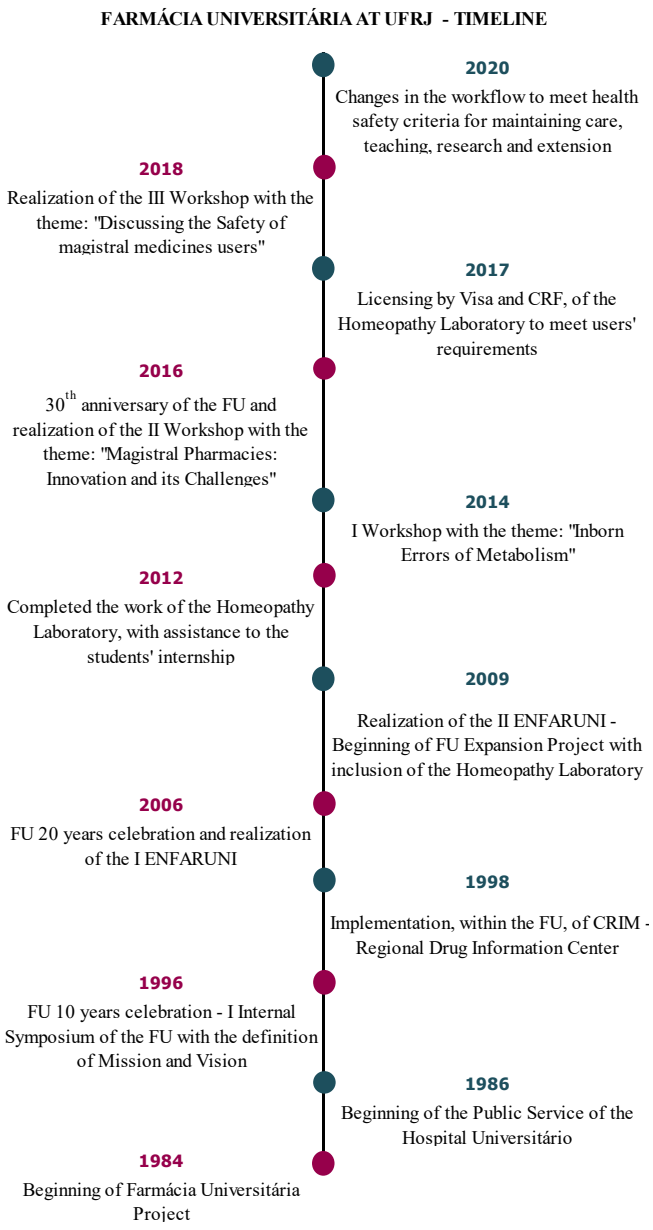

FIGURE 1 - Chronological order of the teaching, research and extension at FU-UFRJ.

In 2002, the professional profile of the pharmacists underwent a major change after the implementation of the New National Curricular Guidelines (DCNs) for the Pharmacy Course. This change followed the international movement driven by discussions about "Pharmaceutical Care", which started to take place in the late `90s. Therefore, there was a need to revise the teaching policies for the Pharmacy course. The pharmaceutical professional in the new generalist curriculum model received a precept that enabled them to work in several areas. Few examples

are production and quality control of medicines, nutrients, food and pharmaceutical supplies, distribution, storage, dispensing, guidance, attention and assistance, hospital pharmacy, clinical pharmacy, pharmacovigilance, research, clinical analysis, bromatology, toxicological and forensic analysis, phytotherapy, homeopathy, blood therapy services and training to act in the elaboration of relevant legislation to the professional sphere (Brasil, 2002).

According to this curriculum, the pharmacist should use the medicine as a tool to monitor medicine treatment with the user to ensure that they are necessary, effective, and safe. A few years later, the Faculty of Pharmacy, at UFRJ, also updated the Pharmacy course curriculum and FU adapted its activities and facilities to provide the medicine users with direct interaction with the pharmacist, creating a personalized service where the pharmacotherapeutic history of the user is managed and analyzed.

In 2017, the Ministry of Education (MEC) instituted the new DCNs for the Undergraduate Pharmacy Course, where it reaffirmed pharmaceutical assistance and medicine as a graduation center for pharmacists. In addition, health care was incorporated into the proposal as the main structuring axis for the graduation of future pharmacists (Brasil, 2017). Therefore, the process of change in the professional practice area of the pharmacist is continuous. In the last decades, the outline of a professional profile that, in addition to technical qualification, plays a social role; that is, more than a professional, the pharmacist must be a citizen professional (Carrillo, 1999).

This new professional profile is following the National Education Plan 2014-2024 (Federal Law n. 13,005/2014) which describes as one of the goals for higher education the performance of students in extension activities, such as programs and projects, primarily for areas of great social relevance, such as health (Brasil, 2014). Therefore, always seeking to offer training geared to the social needs of the medicine user, the Faculty of Pharmacy at UFRJ, sends all undergraduate students to the mandatory internship at the University Pharmacy. Thus, the complementation of the solid theoretical training is not carried out in simple laboratory practice, but in living with the challenging elements of pharmaceutical activity, above all, aiming at the humanization of care, encouraging direct interaction with patients, and the maximum qualification in the production of medicines.

In addition, this program has shown that the triad Teaching, Research, and Extension, especially in the Faculty of Pharmacy of UFRJ is a concrete reality and not only important for professional development, but for the solidification of our unit. Teaching, research, and extension form is the teaching-learning process of Brazilian universities, and the legislation determines the "inseparability" between these learning paths, which must have equal importance in the graduation process (Forproex, 2012).

This work aims to describe the trajectory of FU, from UFRJ, located in Rio de Janeiro, Brazil, in the development of the pharmaceutical professional profile, integrating teaching, research, and extension aimed at prevention, recovery, and health promotion, with the main focus of its activity improving the quality of life of the medicine user, within a Brazilian Public University. In addition, another objective of the work was to describe the activities of patient care, teaching, research, and extension of the FU-UFRJ that continued to be developed during the pandemic of COVID-19.

MATERIAL AND METHODS

The present work is a case report about the University Pharmacy program (FU) at UFRJ. Professors and administrative technicians prepared the article, from the Faculty of Pharmacy (FP), active in the University Pharmacy Program, and who are involved in teaching, research, and extension activities. The focus of the manuscript was to describe and discuss the activities developed at the FU, considering the guidelines of the law of guidelines and bases for graduation in pharmacy in Brazil, with emphasis on teaching that now covers the area of pharmaceutical services management (Brasil, 2017). The report was constructed in stages, where teaching activities were first described, followed by research activities, and finally those of extension seeking their interactions for the education and training of the student in the teaching-learning process at the interface of pharmaceutical care, society, and extension. In addition, there is also an account of the services that the FU-UFRJ

has provided to patients who seek to purchase quality medicines at minimal cost, which contributes to the development of society and the promotion of health.

The methodology's activities were divided into the following steps:

1- Article planning: definition of the theme.
2- Literature review.
3- Data collection and description of teaching activities
4- Data collection and description of research activities
5- Data collection and description of extension activities
6- Data collection and description of services provided to patients
7- Analysis and interpretation of results

RESULTS AND DISCUSSION

This work reports the physical structure of the University Pharmacy, the administrative organization, and the components of the triad: teaching, research, and extension. The FU at UFRJ works to the public from Monday to Friday, from 9:00 am to 4:00 pm, but internally until 8:00 pm during the week and, occasionally, on Saturdays to serve post graduates students. Currently, it occupies an area of around 1000 m^2 in the Health Sciences Center. It has the following sectors: Pharmaceutical Care, Galenic Research and Development, Warehousing, Allopathic Manipulation, Homeopathic Manipulation, Administration and Logistics, Internship Orientation, and Quality Control. Also, it has a room for classes, lectures, and workshops (Sousa *et al*., 2018).

The technical team consists of 4 professors, 13 pharmacists, 01 economist, 03 pharmacy technicians, 03 laboratory technicians, and around 30 monitors who belong to the undergraduate pharmacy staff at UFRJ. Figure 2 shows the organization chart, with the organizational structure of FU-UFRJ.

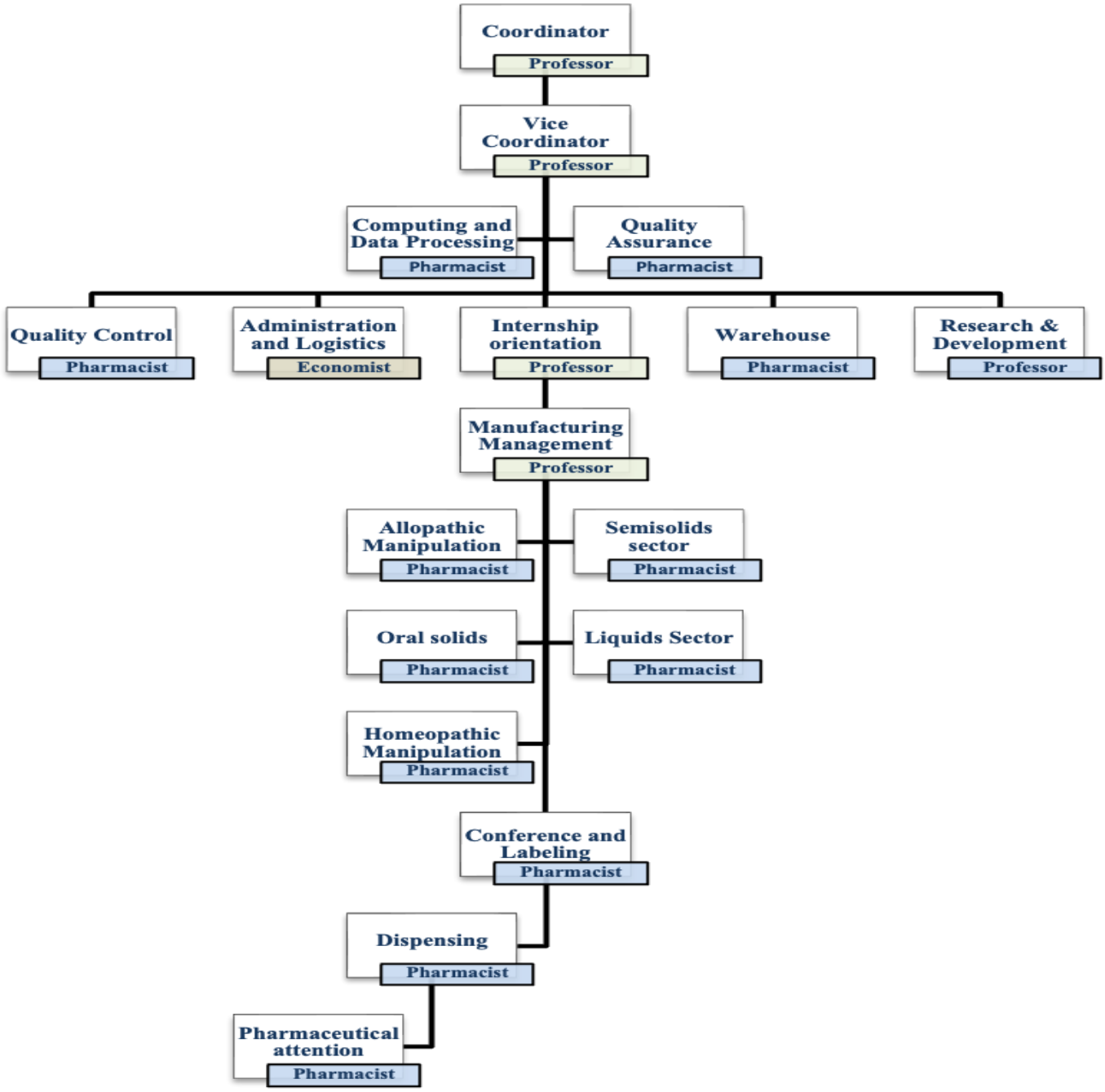

FIGURE 2 - FU-UFRJ organizational flowchart.

Daily, the FU provides care to approximately 200 medicine users from public and private health services, handling, and dispensing allopathic medicines for the treatment of various pathologies such as hypertension, dyslipidemia, osteoporosis, vitiligo, rheumatoid arthritis, psoriasis, and dermatitis. In addition, prescription for neglected and special medication such as artificial saliva for patients with severe mucositis associated with chemotherapy, vitamin and amino acid formulations for metabolic diseases, electrolyte solution for chronic kidney patients, dose adjustment of antihypertensive drugs, diuretics and antibiotics to assist pediatric patients. Patients come from the Institute of Childcare and Pediatrics Martagão Gesteira (Pediatric Hospital,

IPPMG / UFRJ), the University Hospital Clementino Fraga Filho (HUCFF / UFRJ), and the city of Rio de Janeiro. FU also develops homeopathic medicines, since 2017, according to the guidelines of the National Policy of Integrative and Complementary Practices in the Unified Health System (PNPIC-SUS) (Brasil, 2006). FU-UFRJ is committed to Pharmacovigilance and has a Regional Drug Information Center (RDIC), which is part of the Brazilian Medicines Information System (SISMED) of ANVISA (Sousa *et al*., 2018).

Thus, the FU-UFRJ contributes to the solution of major social problems, as it enables new means and processes of production, innovation, and provides knowledge, which allows the expansion of access to technological and social development, and prioritizes practices aimed at meeting social needs related to the health area. The FU-UFRJ is based on a triad teaching, research, and university extension system contributing to health promotion (Figure 3).

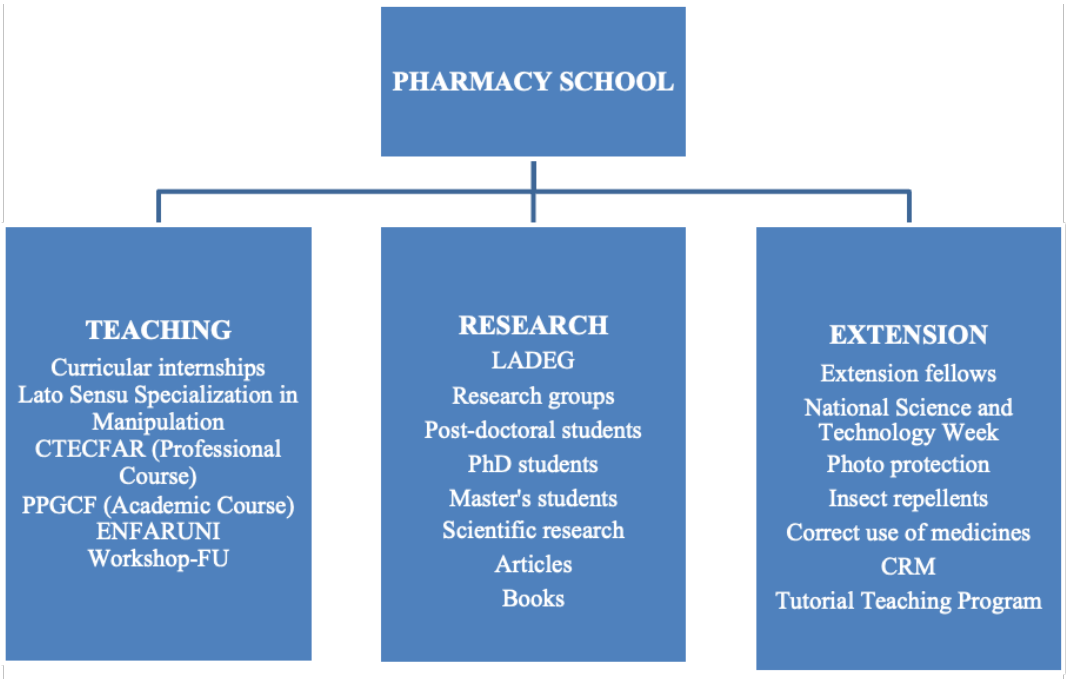

FIGURE 3 - Triad system of FU-UFRJ: teaching, research and extension.

Teaching activities:

Teaching is a systematic form of knowledge transmission used to instruct and educate. Therefore, teaching is an act of intellectualizing the individual for a given society, and this already occurs in the historical process of education. Thus, teaching is not simply passing on content, but seeking to make the subject understood, recognized, learned, and discussed. The FU is a place that has as one of its objectives the learning of pharmacy students through the professional situations experienced by them in their daily lives, with ethical commitment, teamwork, and decision-making, providing patients with quality and responsible service. Therefore, the training of these young people takes into account not only the production but also the promotion of the individual and the improvement of the individual's quality of life, correlating the theoretical contents and their application in real situations, creating a link between the thinking and doing, in the teaching-learning process (Batista, 2012).

The implementation of the FU as a place of activity for a mandatory curricular internship provided students with direct access to different activities and essential

knowledge for their training. The students must complete 90 hours of internship at the FU, covering three distinct sectors, such as the semi-solid formulation sector, oral solids sector, and pharmaceutical care sector, under the guidance of teachers, pharmacists, and monitors, who supervise all activities developed. Currently, the FU receives 320 undergraduate students to take the Supervised Internship discipline, per year, under the supervision of four teachers, thirteen pharmacists, and monitors. In addition, the professors who participate in the program guide undergraduate students on their monographs with relevant topics to the FU.

Thus, in the Pharmacy School Program, all teaching action is connected to the extension actions, which places the students as the protagonist of their technical training. The process of obtaining the skills necessary for their professional performance, and their citizen formation, and a process that the students recognize as an agent of social transformation. In addition, the "classroom" is not limited to the traditional physical space, and the "student-teacher" axis is replaced by the "student-teacher-community" axis (Forproex, 2012).

In 1996, the Specialization Course (*Lato Sensu*) in Allopathic and Homeopathic Manipulation was implemented, which already has about 150 monographs. The course is in its fiftieth edition and it is offered to trained pharmacists working in the compounding field. In the Pharmaceutical Sciences Graduate Program (PPGCF) and the Professional Master in Pharmaceutical Science and Technology (CTECFAR) there are lines of research that contemplate the development of technologies for the production of new pharmaceutical formulations and medicines (Monteiro *et al.*, 2019). In the research projects the Master`s and Ph.D. students develop the research projects, at the FU, and they are supervised by professors that work at FU. At CTECFAR and PPGCF there are several lines of research and among them, "Development of Products and Processes" and "Planning and development of drugs and delivery systems", respectively. Students also participate in the process of improving Good Pharmaceutical Manipulation Practices, with the elaboration of Standard Operating Procedures, the implementation, maintenance, and permanent adaptation of computerized controls and in the pharmacotherapeutic follow-up of users of medicines manipulated in the FU (Gonçalves *et al*., 2018; Silva *et al*., 2020).

In 1996, an Internal Event of FU celebrate its 10th year anniversary, and the team defined the statement of the FU, such as: Vision - to be recognized as a model of a pharmacy school, active in the triad teaching, research and extension, enabling the student the pharmaceutical practice suited to the demand of the Brazilian health system; Mission - to train students in pharmaceutical practice, developing their activities in accordance with current health and professional legislation, within technical-scientific and innovative criteria, having a formative character committed to ethics and the quality of teaching, offering quality products to society with pharmaceutical guidance; values - quality of teaching transmitted to the student; Quality (effectiveness and safety) of the product provided to the user; Quality in the pharmaceutical guidance provided to the user; Promotion of pharmaceutical assistance that favors access to medicines neglected by the pharmaceutical industry or financially inaccessible to users of the public health system (Monteiro *et al.*, 2019; Nigro *et al.,* 2021).

The FU organized discussion forums on ethical conduct, enhancement of professional knowledge, and two forums for the discussion of problems inherent to Pharmacies School: The First National Meeting of University Pharmacies (ENFARUNI), in 2006, and the II ENFARUNI, in 2009, in addition to contributing greatly to the development of the Minimum Standards for School Pharmacies. In 2014, it also organized the I Workshop of the FU, which theme was "Contribution of Compounding Pharmacies in the Treatment of Inborn Errors of Metabolism (IEM)". In 2016, the FU promoted the II Workshop to celebrate the 30 years of creation and show what was developed by its team in those years, and discussed what could be implemented in the future. The theme of the Workshop was: "Magistral Pharmacies: Innovations and their Challenges" and was attended by about 200 people, including speakers, pharmacists, and other health professionals, as well as medicine users, and students to discuss new technologies improving the quality of life of these users. In 2018, FU promoted the III University Pharmacy Workshop with the theme "Discussing the safety of users of compounding

medicines". The event promoted in 2018 had more than 200 participants among undergraduate, graduate students, pharmacists, and professors.

FU also has launched two editions of its Therapeutic Book and one edition of its Therapeutic Manual, which show a set of technical-scientific information on medicines that the FU handles (Santos, Monteiro, 2020; Santos, Monteiro, 2020).

The internship developed at FU is a space for learning the profession and building professional identity and provides support for the establishment of a relationship between theory and practice (Silva, Gaspar, 2018). In addition, professors and technicians that work in the FU program constantly acquire scientific knowledge in the pharmaceutical field with practical activities, with information exchanges, in informal settings, through the organization of forums, workshops, and meetings, as well as preparing material.

Research activities:

Scientific research is the practical application of a set of systematic research processes used by a researcher to develop a study. It is also conceived as a group of activities that aim to discover new knowledge in the scientific, literary and artistic domain (Araújo, 2006).

In this context, the FU develops research considering different methods and techniques applied to the galenic development of new pharmaceutical and cosmetics formulations, in the Galenic Development Laboratory (LADEG), which is located inside FU. Also, FU develops observational research in pharmacoepidemiological studies that correlate the consequences of drug use by the population and its clinical, economic and social impact. Between 2002 and 2019, more than 100 papers were published in Annals of Congress, about 70 articles in national, and international scientific journals, 3 published books, and 7 patents deposited.

LADEG is registered in the Directory of the National Council for Scientific and Technological Development (CNPQ) and has a research group on the Application of Nanotechnology in the Development of Nanocarriers for Pharmaceutical Active Pharmaceutical Ingredients. Teachers and administrative technicians linked to LADEG participate as coordinators and collaborators in several projects approved by different agencies of the Research Foundation.

The research developed at FU-UFRJ works to construct student's knowledge and information, which can open multiple possibilities of articulation between the University and Society, in the research, mainly in the professional graduate program in Pharmaceutical Science and Technology (Becker, 2012; Gonçalves *et al*., 2018; Silva *et al*., 2020).

The professors of FU-UFRJ are connected in two post-graduate courses CTECFAR and PPGCF. Currently, 05 doctoral students and 20 master students have graduated from PPGCF (Academic Program) and 10 master students from CTECFAR (Professional Program). In addition, there are 04 Scientific Initiation students with a scholarship from the UFRJ program. Pharmacists, who work at FU-UFRJ, have entered the CTECFAR and PPGCF postgraduate courses for professional qualifications, and several dissertations and theses contribute to the improvement of medicines handled in the pharmacy.

Another important point is the collaboration of graduate students (master's and Ph.D.) in extension actions and the academic production that was developed from the extension activities, in the format of articles, dissertations, and informational material.

Extension activities:

University Extension, in the context of the inseparable triad among teaching, research, and extension, is an interdisciplinary educational, cultural, scientific and political process that promotes transformative interaction between universities, and other sectors of society. Thus, it is the task of the extension to build the sharing relationship between the scientific and technological knowledge produced at the university and the knowledge held by the communities, through dialogic interaction (Forproex, 2012).

Initially, FU started as an extension project, but over time, it became one of the major extension programs at UFRJ. It developed and participated in several extension projects, and activities, such as the national week of science and technology (SNCT), where since 2012 takes

part in the activities of the SNCT addressing several themes with an emphasis on medicines and health care, always within the general theme proposed by the Ministry of Science, Technology, Innovations and Communications (MCTIC). In these participations, workshops, games, and debates were realized, inserting questions about allopathic and homeopathic medicines as a way of adding information to elementary and high school students who visit UFRJ during this event (Monteiro *et al*., 2019; Lopes *et al*., 2020; Costa *et al*., 2021).

The FU participated in the extension project entitled "Establishing a constructive multidisciplinary relationship with public schools: a contribution from the Faculty of Pharmacy (FP), Federal University of Rio de Janeiro (UFRJ)" with the theme "The medicine is information". Teachers, students, and technicians from the Faculty of Pharmacy, of UFRJ, were divided into thematic groups to carry out activities in public schools in the city of Rio de Janeiro (RJ). The project "The information of medicines" aimed to promote health education, favoring its rational use (URM), subsidizing teachers and students of elementary and high school, through the development of multidisciplinary activities. That encouraged experimentation and reflection on health, having as main strategy medicines and pharmaceutical sciences, using playful resources and seeking the collective construction of knowledge, in an interdisciplinary and multidisciplinary way, and promoting the exercise of citizenship (Lopes *et al*., 2020).

FU has contributed informing on topics such as anabolic steroids, the morning after pill, sunscreens, conservation and use of medicines, for example, always focusing on URM from the perspective of presenting actions based on requests from public school teachers and students themselves. The FU guarantees the quality of the compounding medication and continues to assess whether the medicines are necessary, effective, and safe for the user in different extension projects. Few examples are "Pharmaceutical Care in Arterial Hypertension at the FU / UFRJ"; "The Role of the Pharmacist in Diabetes: From Education to Pharmacotherapeutic Follow-up"; "Dáder Methodology Applied to Users of Alendronate Sodium Manipulated at FU of UFRJ"; "Use of *Ginkgo Biloba* in the Elderly: A Contribution of the Pharmacist to the Rational Use of Medicines"; "Dispensing as a Differential Indicator of the Service offered by the FU to its Patients"; "The role of the pharmacist in ensuring the safety of topical drug treatment for vitiligo patients"; "Pharmacovigilance: An action in Health for Detection and Evaluation of Adverse Events Produced by Medicines"; "Pharmacotherapeutic Follow-up of Patients Using the Medication Chloroquine Diphosphate Manipulated at FU / UFRJ"; "Problems Related to Simvastatin Handled at FU / UFRJ"; "FU: Pharmaceutical Assistance and Inclusion of Medicine Users in the National Policy of Integrative and Complementary Practices of the Ministry of Health", which received funds and allowed the implementation of the homeopathy laboratory in 2013. Furthermore, "The Social Determinants of Health and Adherence to Treatment in Medicine Users" (Project on the use of flowers for alcoholic patients); "Use of Heteroisotherapy for the Treatment of Smoking"; "Hydroxychloroquine capsules at the University Pharmacy: How to guarantee the maintenance of the treatment?"; "Health Photo-Education: Skin Cancer, how to avoid it?"; "Information as a strategy to promote the rational use of medicines: Know the medicines you use"; "How to treat wounds with papain?"; "How to prevent Dengue, Zika, Chikungunya?"; "Special people: Do you know anyone?"; "Tacrolimus, what else does it deal with?"; " It's time to take medicine! "; "Useful Information on Medicines and Health Promotion: Emancipation of the Individual concerning to Self-Care". Some extension projects have undergraduate students with scholarships work in the actions (Sousa *et al*., 2018; Lopes *et al*., 2020; Costa *et al*., 2021).

RDIC is one of the FU's extension projects and it is responsible for providing information based on systematized scientific evidence on medicines, since its creation in 1998 (Sousa *et al*., 2018). RDIC is also an indispensable tool in pharmacotherapy follow-up projects for medicine users, as it provides information about medications such as drug-drug interactions, drug-food interactions and other subsidizing the pharmacist in the analysis of negative results associated with drugs. As of 2005, RDIC started to collaborate with the Pharmacovigilance Unit of the State of Rio de Janeiro, and subsidizes information about formulations, prepares information leaflets, and guides for the patient guidance, in addition to organizing lectures for medicine users and

the community on topics related to drugs and health care (Passos *et al*., 2009).

The Tutorial Teaching Program (PET), since 2019, has been developing actions in the FU, since its tutor is responsible for the supervised internship discipline and established the FU as one of the central action points of the group, promoting activities aimed at Health Care, and emphasizing the FU as a mandatory practice scenario, related to pharmaceutical assistance.

The Extension actions in FU bring to society what is learned within academic walls and brings in what the community has to offer with its popular and cultural knowledge. All happens through the application of its guidelines: dialogical interaction, which guided the development of relations between University and society. The inseparability between teaching, research and extension, in the FU Program has always linked the process of training people and generating knowledge; impact on student education, through initiatives that made curriculum flexibility and social impact possible, through transformative action to meet the needs of society.

Triad Teaching, Research, and Extension

The inseparability between teaching, research and extension reflects a concept of quality in academic training, which favors the approximation between university and society, critical self-reflection, theoretical and practical emancipation of students (FORPROEX, 2012). At FU, during the supervised internship in Pharmacy Compounding course the undergraduate students are protagonists of their technical and citizen training, with the involvement of professors, administrative technicians (pharmacists), people community, and other students. Thus, a new concept of the classroom emerges and the classic pedagogical axis "student-teacher" is replaced by the axis "student-teacher-community". The student is a participant in the knowledge process, using participatory methodologies, in the research-action format, with the participation of social actors and dialogue, with academic production, in the format of articles in journals, booklets, manuals, among others.

The undergraduate students, during the supervised internship in Pharmacy Compounding course, performed in the FU, are acquiring the necessary technical knowledge for their training, such as the development of different pharmaceutical forms and pharmaceutical care, being protagonists of the process, with the involvement of teachers, pharmacists, people from the community, and other students (teaching). During the internship, the undergraduate students participate in activities within the extension projects, which are developed at the FU, such as: "Information as a strategy to promote the rational use of medicines: Know the medicines you use"; "How to treat wounds with papain?"; "How to prevent Dengue, Zika, Chikungunya?"; "Special people: Do you know anyone?"; "Tacrolimus, what else does it deal with?"; "It's time to take medicine!"; "Useful Information on Medicines and Health Promotion: Emancipation of the Individual Concerning Self-Care (extension). The development of these integrated activities generated several academic productions, such as: Therapeutic Manual of University Pharmacy, Therapeutic Memento of University Pharmacy, scientific articles, and the inclusion of undergraduate students in a graduate program (research).

Teaching, research and extension activities during the covid-19 pandemic:

In January 2020, it was confirmed that a new type of coronavirus called Severe Acute Respiratory Syndrome (SARS-CoV-2) emerged. The World Health Organization (WHO) named Wuhan pneumonia Coronavirus Disease-2019 (COVID-19) on February 11, 2020. The new coronavirus was quickly spread worldwide and COVID-19 became a worldwide pandemic (Who, 2020).

The activities of the FU-UFRJ were adapted during the quarantine imposed on it by the COVID-19 epidemic due to the need to produce some neglected and special drugs, which only the FU handles for patients from the Institute of Childcare and Pediatrics Martagão Gesteira (Pediatric Hospital, IPPMG / UFRJ), the University Hospital Clementino Fraga Filho (HUCFF / UFRJ) and the city of Rio de Janeiro (Nigro *et al*., 2021).

The activities related to attendance, teaching, research, and extension in the FU at UFRJ have been adjusted to minimize the risk of contagion among team members, students (Pharmacy Graduation and Graduate Studies)

and patients. In the teaching area, disciplines were offered remotely to graduate students, with synchronous and asynchronous classes. In the extension area, scholarship students also started to develop remote work, with video posts, newsletters, and mini- courses on several Instagram pages, such as: @ recado_farmacêutico (Costa *et al*., 2021).

In the research area, a special schedule was created in the laboratory, with a weekly exchange of activities, together with the adoption of sanitary measures, for graduate students (masters and doctoral) to work on their projects. However, undergraduate students do remote work, such as bibliographic review and presentation of seminars. During the pandemic, the FU research area developed an alcohol gel based on Aristoflex® AVC and assessed its antimicrobial activity (Nigro *et al*., 2021).

The medication-dispensing services at the FU have been maintained since the beginning of the COVID-19 pandemic, as the FU produces neglected and special medications for patients at university hospitals and throughout the city of Rio de Janeiro. Therefore, it was necessary to adapt the routine of pharmaceutical care, by reducing the number of monitors, who are students of the undergraduate course and are part of the team, to avoid agglomerations. Initially, pharmacists and pharmacy technicians who belonged to the risk group were identified, and for this reason, they started to perform remote work. The other team members underwent rigorous health training and a work schedule was established to avoid crowds.

Table I contains the main points addressed in the training of the work team, to minimize the risk of spreading the COVD-19 virus. Table II contains the adjustments that were made to the medication-dispensing sector, also aiming at protection against the spread of COVID-19.

TABLE I - Main points discussed in training with work team to minimize the risk of spreading the COVD-19 virus

Information	Description
1	Maintain a social distance of at least 2 meters between individual;
2	Constant hand washing with soap and water or asepsis with alcohol gel or 70% alcohol solution before, during and after work;
3	Use personal protective equipment such as a mask, face shield, cap and gloves;
4	Avoid touching the protective mask, eyes, nose and mouth without proper hand hygiene;
5	When coughing or sneezing, cover your nose and mouth with a disposable handkerchief, failing that with the elbow bend;
6	Weekly work schedule with alternations to avoid crowding in the work environment: work teams are fixed;
7	Do not shake hands, kisses and hugs when greeting;
8	Do not share personal items like cutlery, plates, glasses or bottles;
9	Use of scales in common rooms as a pantry for meals to avoid crowding;
10	Immediately notify the administration of FU-UFRJ in case of signs and symptoms of COVID-19;
11	Suggestion for everyone to take regular tests for COVID-19 at the Health Sciences Center at UFRJ (Scheduling COVID-19: Covidimeter UFRJ).

Covidimeter: available from: https://coronavirus.ufrj.br/covidimetro/

TABLE II - Adjustments to the public service sector to protect against the spread of COVID-19

Information	Description
1	Service room with open doors and windows for air circulation;
2	The entry of patients and staff members without a mask is prohibited;
3	The temperature of the patient and staff is measured before entry and in a fever condition, the patient is prevented from entering and the staff member is instructed to be quarantined and undergoing tests;
4	The entry of patients and staff is conditioned to asepsis of the hands with alcohol gel (70%) using a pedal dispenser;
5	Shoes should be disinfected on the sanitary mat containing sodium hypochlorite solution;
6	One patient will be served at a time for each counter;
7	Service desks are separated by an acrylic screen with spacing between them;
8	There is an acrylic separation shield between the pharmacist and the patient;
9	Constant cleaning of environments with a large flow of people such as service, bathroom and pantry with sanitizing products;
10	Scale of use of the pantry for meals with a distance of 2 meters for each person;
11	The University Restaurant under the responsibility of a Nutritionist who follows strict health standards is providing meals.

CONCLUSION

The FU-UFRJ started with the teaching-research-extension triad, but today, undoubtedly, its social role is relevant in serving the low-income medicine users who need the pharmaceutical product, in addition to all the components involved in protection, recovery and health promotion. With more than 30 years of service to the community, the FU has consolidated itself as a program that assuredly changed the health practices of a generation of pharmacists and patients, building a solid foundation in the fight for the rational use of medicines. From its founding in 1982 until the current quarantine, due to the COVID-19 pandemic, FU-UFRJ has been adapting its activities and continued to provide patient care services and teaching, research and extension activities. FU represents an opportunity to interact with the community, through the involvement of students, teachers and administrative technicians, and using the medicine in many actions in health care and in actions aimed at meeting the demands of the population.

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