

# THE CONTRIBUTION OF THE FAMILY MEDICINE NURSE TO THE PREVENTION OF CHRONIC DISEASES THROUGH HEALTH EDUCATION AND PATIENT SUPPORT

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## I. INTRODUCTION

Chronic diseases such as type 2 diabetes mellitus, hypertension, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), and obesity represent one of the greatest challenges facing healthcare systems worldwide. According to data published by the World Health Organization, non-communicable diseases account for approximately 74% of all deaths globally, corresponding to around 41 million lives lost each year [1]. These conditions can largely be prevented through early interventions, modification of risk behaviors, and the promotion of a healthy lifestyle. However, achieving this requires effective prevention structures and health education programs, particularly within primary healthcare settings.

Family medicine plays a central role in this context, serving as the first line of contact between patients and the healthcare system. Due to its continuous, comprehensive, and accessible nature, family medicine is well positioned to implement prevention, screening, and early intervention strategies. Although the family physician is often considered the central figure in this therapeutic relationship, nurses represent essential partners who are frequently underutilized. Over recent decades, the scientific literature has increasingly highlighted the contribution nurses can make to chronic disease management, both through health education and patient support activities [2].

The role of the nurse has undergone a significant transformation, moving beyond technical and administrative responsibilities toward a much more complex model that includes counseling, education, emotional support, and even care coordination [3,4]. Within the family medicine

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**Keywords:** Chronic diseases, family medicine, nurses' role and involvement, promotion of a healthy lifestyle.

team, nurses are often the first healthcare professionals with whom patients interact, providing a unique opportunity for health promotion and disease prevention. Studies indicate that the active involvement of nurses in patient education, health monitoring, and support for maintaining a healthy lifestyle can lead to significant improvements in health outcomes [5,6].

## II. AIM AND OBJECTIVES

The primary aim of this research is to evaluate the involvement of nurses working in family medicine in the prevention of chronic diseases through health education activities and individual or group support provided to patients. The study seeks to identify best practices, limitations, and opportunities for improving preventive interventions within the primary healthcare team.

Research Objectives:

- To evaluate the health education activities carried out by nurses in family medicine practices concerning the most common chronic diseases (diabetes, hypertension, COPD, etc.).
- To identify the frequency and types of preventive interventions performed by nurses during interactions with patients suffering from chronic diseases (instruction, monitoring, counseling, and referral to other services).
- To analyze nurses' perceptions of their own role in chronic disease prevention and the difficulties encountered in implementing educational and support activities.
- To assess chronic patients' perceptions regarding nurses' involvement in supporting the management of their disease, including trust, perceived effectiveness, and impact.
- To identify the main barriers (organizational, professional, and communication-related) affecting the effective delivery of preventive activities by nurses in family medicine practice. →

- To formulate recommendations for improving the scope of nursing practice in chronic disease prevention within primary healthcare, based on the findings of the research.

### III. MATERIALS AND METHODS

This study employs a mixed-methods research approach, combining quantitative and qualitative methods to analyze the role of nurses in family medicine in the prevention of chronic diseases through health education activities and patient support. This approach allows for both the collection of measurable and generalizable data and the development of an in-depth understanding of the professional context and the perceptions involved.

#### Research Design

The study is exploratory, descriptive, and explanatory in nature, based on a mixed-methodology approach:

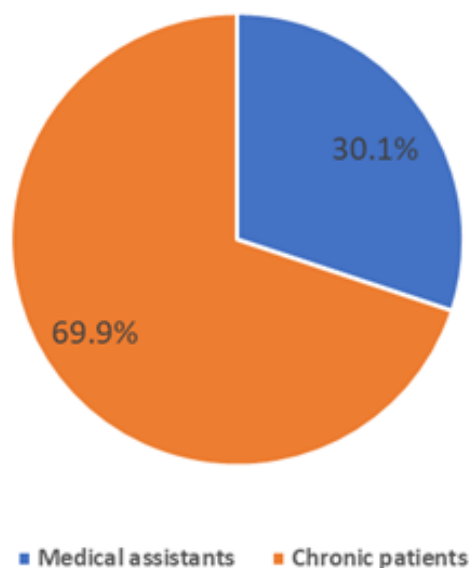
- Quantitative, through the administration of a structured questionnaire;
- Qualitative, through the analysis of a simulated case study inspired by validated practices.

#### Study Population and Sample

- The research was conducted on a sample of 73 participants, distributed as follows:
- 22 nurses actively working in family medicine practices (approximately 30%);
- 51 patients with chronic diseases (approximately 70%), beneficiaries of preventive services provided by nurses.

This proportional structure was selected to reflect both the perspective of healthcare professionals and that of patients involved in preventive care. (Figure 1)

**Figure 1: Distribution of the study population – medical assistants and chronic patients**



### Research Instruments

#### a) Questionnaire

The questionnaire, administered to nurses, consisted of 10 closed-ended and semi-open-ended questions. It aimed to assess:

- nurses' involvement in preventive activities;
- the frequency and types of interventions;
- perceptions regarding the effectiveness of the activities carried out;
- difficulties encountered in preventive practice.

#### b) Qualitative Case Study

The case study was developed based on a realistic model illustrating activities carried out in a family medicine practice located in a medium-sized city. It highlights the educational and supportive activities performed by the nurse, the challenges encountered, and the outcomes achieved in the management of patients with chronic diseases.

### Inclusion Criteria

For nurses:

- minimum one year of experience in family medicine;
- actively employed in professional practice at the time of the study.

#### For patients:

- diagnosis of at least one chronic disease (e.g., diabetes, hypertension, COPD);
- recent interaction with a nurse for preventive purposes.

### Data Collection Method

Data were collected through two complementary channels:

- online, using secure electronic forms;
- in person, through the distribution of printed questionnaires in participating family medicine practices.

This approach increased accessibility and enabled the inclusion of participants from both urban and rural areas with diverse profiles.

### Research Ethics

Participation in the study was voluntary. Each respondent was informed about the purpose of the research, the anonymous and confidential nature of the responses, and their right to withdraw at any time. No personally

Figure 2: Distribution of respondents by age

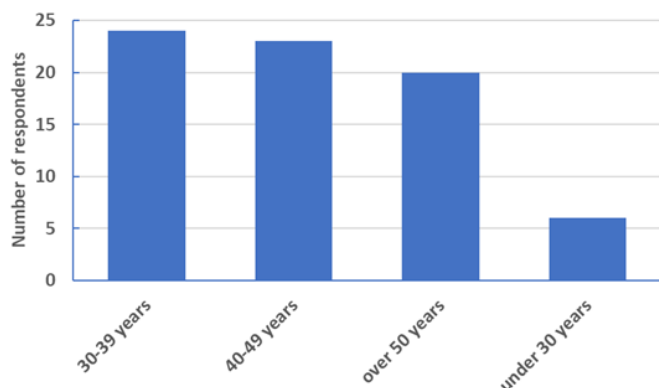


Figure 3: Distribution of respondents by gender

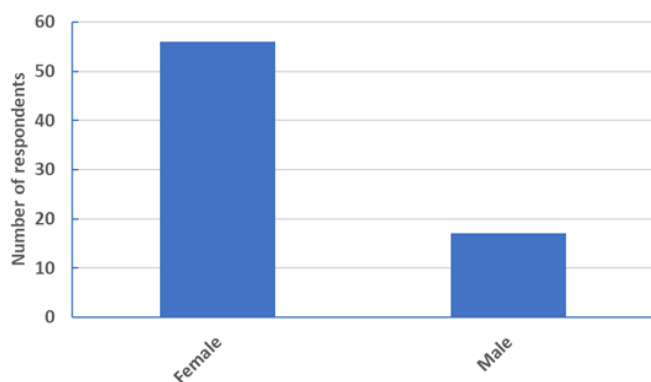


Figure 4: Geographical distribution of respondents

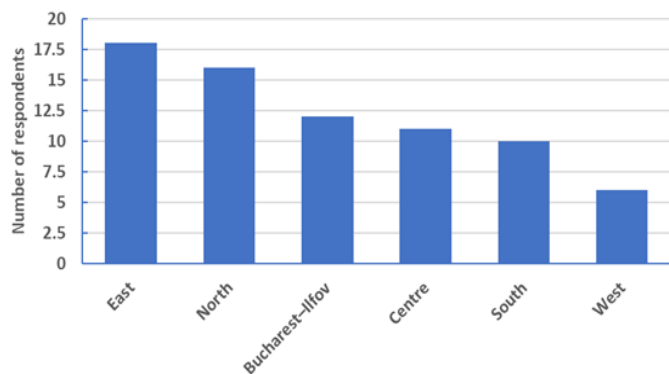
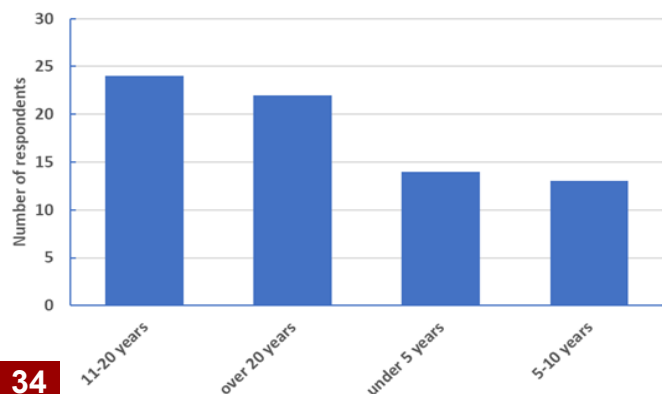


Figure 5: Professional experience of nurses



identifiable data were collected. The study complies with the principles of professional ethics and good research practice.

## IV. RESULTS

### Sample Description

The analysis of the sample of 73 respondents reveals a balanced distribution across demographic and professional variables. Regarding age, the majority of respondents fall within the 30–39 and 40–49 age groups, suggesting an active workforce with accumulated experience but still engaged in learning and adaptation processes. Few cases were recorded under the age of 30, which may indicate a potential barrier to early entry into the profession. (Figure 2)

From the perspective of gender distribution, females predominate (approximately 80%), which is consistent with data in the nursing field, where the profession remains predominantly female (Figure 3).

Respondents come from all geographical regions of the country, with a consistent representation from the central and southern areas, which ensures relevant regional diversity for the analysis of professional practices. (Figure 4)

Regarding professional experience, over 65% of respondents have been working for more than 10 years in family nursing, which adds credibility to the perceptions expressed in the questionnaire. The number of early-career respondents (under 5 years of experience) is low. (Figure 5)

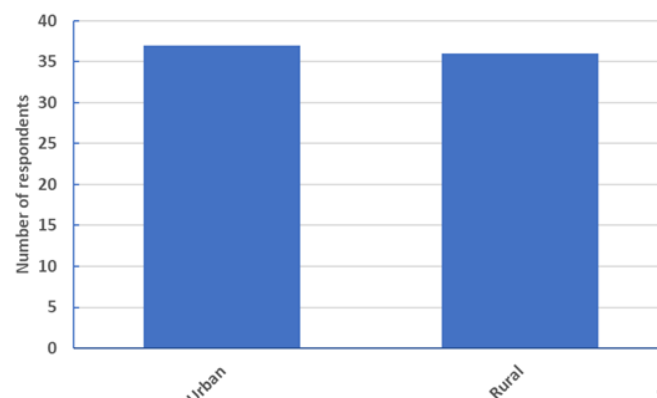
Regarding the work environment, there is a slight predominance of respondents from urban areas, although rural areas are also well represented. This aspect will be relevant in the subsequent correlation with the types of preventive activities carried out and their frequency. (Figure 6)

### Preventive activity of nurses

The preventive activity of nurses in family medicine represents a central component of their intervention in patients with chronic diseases. The analysis of responses to questions 6–10 of the questionnaire highlights the level of involvement, activity priorities, and perceptions regarding the impact of the health education provided.

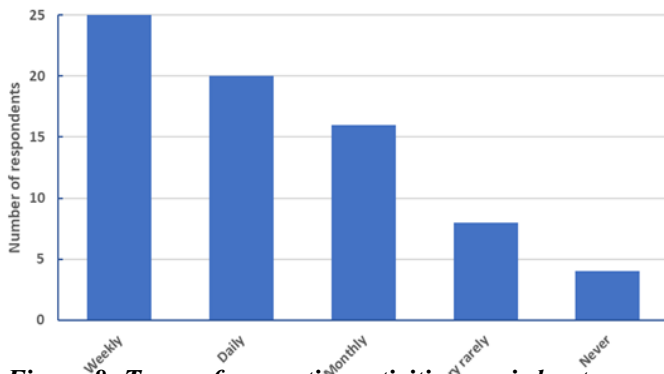
Regarding the frequency of preventive activities, over 60% of respondents reported carrying them out on a weekly or daily basis, demonstrating a consistent commitment to

Figure 6: Work environment – urban vs. rural

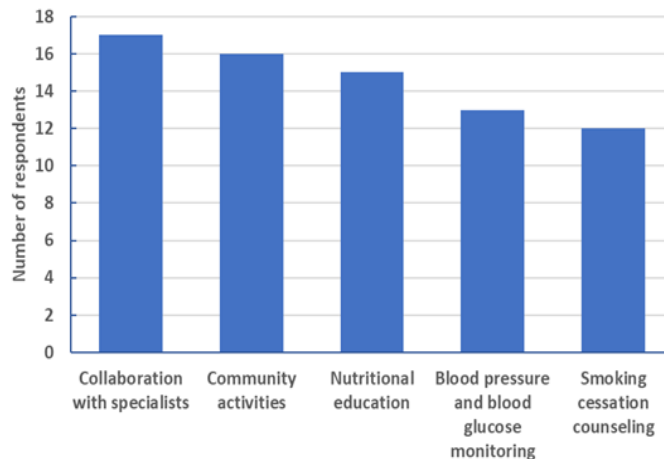


prevention. Only a small percentage stated that they perform these activities “very rarely” or “never,” which suggests good integration of this type of intervention into the professional routine. (Figure 7)

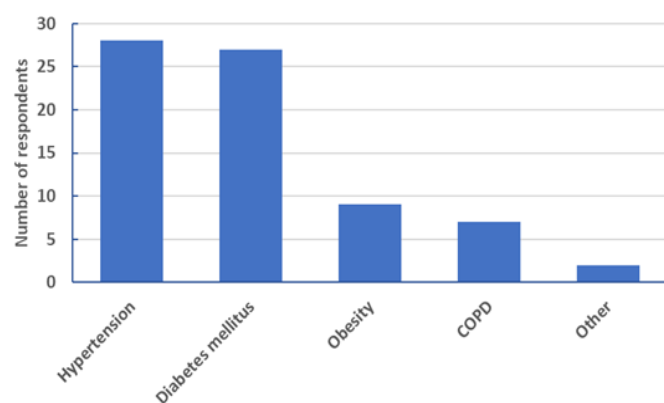
**Figure 7: Frequency of preventive activities**



**Figure 8: Types of preventive activities carried out**



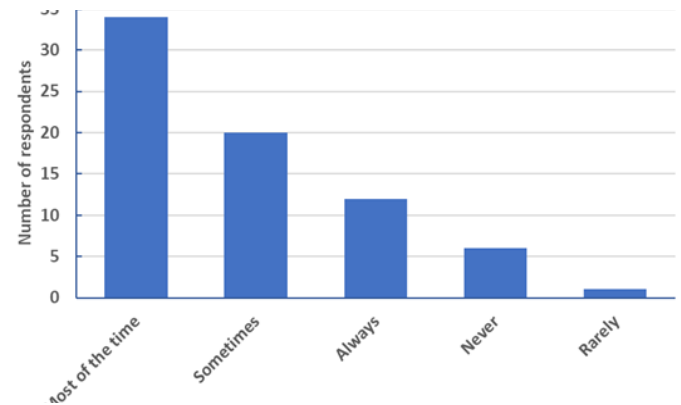
**Figure 9: Afecțiunea principală vizată în prevenție**



Regarding the types of activities carried out, the most frequent include monitoring blood pressure and blood glucose levels, providing information on nutrition, and counseling for smoking cessation. Less frequent are community-based activities or direct collaboration with other specialists (such as nutritionists and psychologists), which reflects certain structural or time-related limitations in daily practice. (Figure 8)

Regarding the conditions targeted by prevention efforts, two main categories predominate: diabetes mellitus and

**Figure 10: Patient receptiveness level**



hypertension. Together, these account for over 70% of responses, reflecting both the high prevalence of these diseases and the feasibility of implementing educational and monitoring interventions for these conditions. Chronic obstructive pulmonary disease and obesity are also mentioned, but with lower frequency. (Figure 9)

The relationship between the nurse and the patient is an essential factor in the effectiveness of preventive interventions. The question regarding the degree of patient adherence and compliance indicated that nearly 60% of respondents believe that patients “always” or “most of the time” follow the advice provided. This is a positive outcome, although it does not exclude the need to strengthen modern health education methods. (Figure 10)

Regarding participation in preventive activities carried out outside the medical office, approximately 55% of respondents stated that they are involved in such actions. This indicates that nurses are not limited to a passive role but act as active health agents within the community. However, a significant proportion of respondents (approximately 45%) do not participate, which may indicate either a lack of opportunities or institutional barriers.

The analyzed data reflect a high level of involvement of nurses in the prevention of chronic diseases, particularly in screening, monitoring, and counseling activities. However, there is room for improvement in external activities and interdisciplinary collaboration, both of which are essential components of a modern and effective primary care model.

### Quantitative and qualitative integration of results

The adoption of a mixed research methodology enabled not only the collection of relevant statistical data regarding the preventive activity of nurses, but also a deeper understanding of the context and mechanisms through which this activity influences public health. The integration of the results obtained through the questionnaire with those illustrated in the case study allows for the formulation of solid conclusions regarding the effectiveness, challenges, and development directions of the nurse’s role in family medicine.

The quantitative analysis, conducted on a sample of 73 participants, highlighted that the majority of respondents, especially healthcare professionals, are actively involved in preventive activities, with a high frequency and a considerable diversity of interventions. .

For example, the data indicate that over 60% of nurses carry out preventive activities at least weekly, with the most common activities including monitoring blood pressure and blood glucose levels, as well as counseling on nutrition and smoking cessation. These findings validate the idea that prevention is integrated into current practice, while also suggesting a focus on a relatively limited set of interventions, to the detriment of others such as interdisciplinary collaboration or broader community engagement.

The case study detailed in subsection 3.3 supports this observation by illustrating the activity carried out in a family medicine practice in a medium-sized city. Here, the nurse is actively involved in the prevention of chronic diseases through education, screening, and continuous monitoring, but faces limitations related to time, understaffing, and logistical difficulties in organizing external activities. At the same time, it is noted that the personalized relationship with patients is a strategic advantage in implementing preventive measures, especially in the case of chronic conditions such as diabetes mellitus and arterial hypertension.

From the perspective of targeted conditions, the questionnaire data confirm the importance given to the two major pathologies—diabetes and hypertension—which is justified both by their prevalence in Romania and by the potential for nursing interventions in this field. In the case study, the nurse regularly monitors blood glucose and blood pressure values, providing educational support and counseling, which accurately reflects the trends identified in the quantitative data.

Patient receptivity is another key aspect present in both data sources. Approximately 60% of respondents consider that patients listen to and follow the advice provided. This relatively optimistic percentage is supported by observations from the case study, where the chronic patient, having known the nurse for several years, demonstrates a high level of trust and adherence to her recommendations. Thus, the relational component becomes a major factor of success in prevention, showing that the constant presence of the nurse in family medicine contributes to strengthening a stable and effective therapeutic relationship.

On the other hand, the quantitative data show that only 55% of nurses participate in external activities, and the case study confirms that such interventions are rare due to lack of time, personnel, or institutional initiative. This highlights an important area for professional development, especially in the context of community health promotion. Prevention should not be limited to the clinical setting but should extend to schools, community centers, or other informal spaces of interaction with the population.

Overall, the integration of the two data sources—the questionnaire and the case study—reveals a remarkable coherence between collective perceptions and ground-level reality. The quantitative data provide a solid and measurable overview of nurses' involvement in prevention, while the case study humanizes these data, offering contextual depth and a practical example of application. Together, they build a realistic, balanced, and well-informed picture of the essential role that nurses play in reducing the burden of chronic diseases.

This integrated analysis highlights the importance of maintaining a holistic approach in health research, where

quantitative data are complemented by a qualitative understanding of context. Only in this way can the development of policies and practices tailored to the real needs of patients and professionals in the primary care system be supported.

### Qualitative case study

This qualitative case study illustrates the active involvement of a nurse working in an urban family medicine practice located in a medium-sized city in Romania in the process of chronic disease prevention. The practice serves approximately 2,000 patients, of whom a significant proportion (around 40%) are diagnosed with chronic conditions such as type 2 diabetes mellitus, arterial hypertension, dyslipidemia, or COPD. The nurse's activity is carried out within a team consisting of a family physician and a medical secretary, but she represents the main point of contact for patients in terms of monitoring, counseling, and educational support.

The nurse's role is not limited to technical tasks (measurements, records, appointments), but also includes complex components of active prevention. In order to better understand the types of interventions, the main activities carried out have been summarized in a table that highlights their monthly frequency and perceived impact on patients. (Table 1)

**Table 1 – Preventive activities carried out in the practice – monthly frequency and impact**

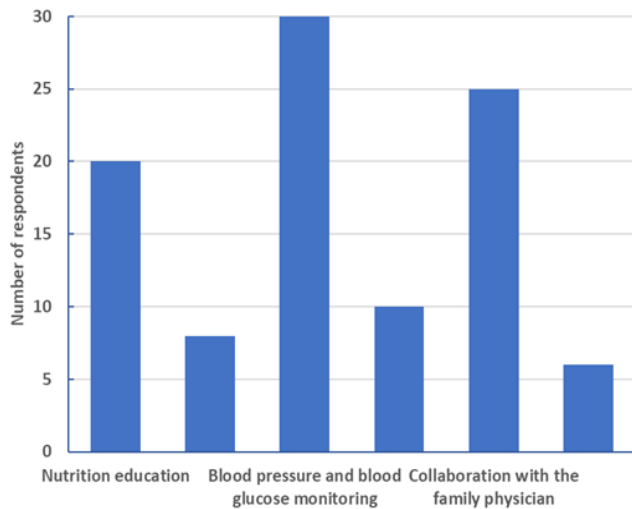
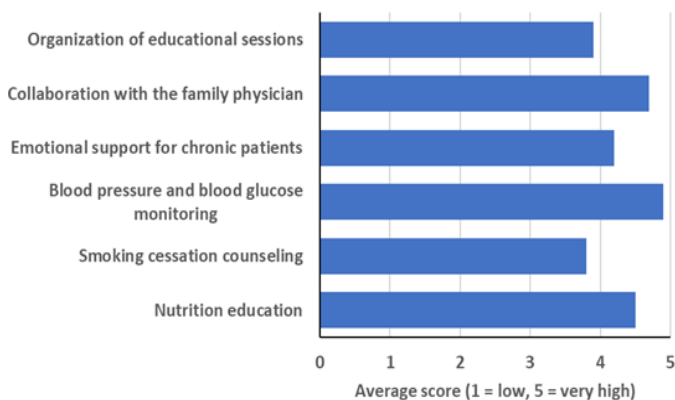
Activity	Estimated monthly frequency	Level of impact (1–5)
Nutritional counseling	20	4.5
Smoking cessation counseling	8	3.8
Blood pressure (BP) and blood glucose monitoring	30	4.9
Emotional support for chronic patients	10	4.2
Collaboration with the family physician	25	4.7
Organization of educational sessions	6	3.9

From the analysis of the table, it appears that the most frequent activities are blood pressure and blood glucose monitoring (an estimated 30 interventions per month), collaboration with the family physician (25), and nutritional counseling (20). These interventions also receive the highest impact ratings, with average scores ranging between 4.5 and 4.9, which reflects their perceived importance in the management of chronic diseases.

For a clearer visualization of these data, two graphs were created to highlight the distribution of activities according to frequency and perceived impact. (Figures 11 and 12)

The frequency chart clearly shows that technical-educational interventions (measurements, nutritional counseling) are dominant, reflecting the high demand from chronic patients for monitoring and practical guidance. Activities such as smoking cessation counseling and emotional support are performed less frequently, both due to lack of time and the absence of standardized protocols. (Figure 11)



**Figure 11 – Monthly frequency of preventive activities****Figure 12 – Perceived impact level of preventive activities**

Regarding the perceived level of impact, all analyzed activities were rated above 3.5, indicating a significant added value for patients. The highest scores were obtained for blood pressure and blood glucose monitoring (4.9) and effective collaboration with the family physician (4.7), confirming the importance of teamwork and continuous assessment in the management of chronic conditions. (Figure12)

Another significant aspect observed in this practice is the personalized relationship between the nurse and the patients. As a stable healthcare professional within the community, the nurse has developed trusting relationships, especially with elderly patients or those with multiple conditions. This long-term relationship enables more effective interventions, as patients are more open to receiving recommendations and more consistent in following them. This aspect was also highlighted in the questionnaire results, where the majority of respondents considered that patients “always” or “most of the time” listen to the advice provided by nurses.

At the same time, the case study also reveals several challenges. The lack of adapted educational materials, limited time allocated per patient, the absence of an appropriate space for counseling, and difficulties in collaborating with other specialists (nutritionists, psychologists) are fre-

quently encountered barriers. Although the nurse is willing to participate in external activities (e.g., school campaigns or community center initiatives), these are rare due to the lack of clear institutional organization.

Despite these limitations, the impact of the nurse’s activity on chronic patients is visible. The level of control of blood pressure and blood glucose values has improved among patients with whom there is consistent collaboration, and they demonstrate greater responsibility for their own health. In addition, there is a noticeable reduction in the use of emergency services for decompensated chronic conditions, which may be an indirect indicator of the effectiveness of prevention carried out in the practice.

The case study highlights that the role of the nurse in family medicine is not merely complementary, but essential for the prevention and control of chronic diseases. Her daily activity, although sometimes invisible in national statistics, directly contributes to reducing the burden of non-communicable diseases and improving patients’ quality of life.

## V. DISCUSSIONS

The results of the present research outline a clear picture of the expanded role played by the nurse within family medicine, particularly in relation to the prevention of chronic diseases. In line with the specialized literature, nurses’ activities go beyond technical tasks and extend into the areas of education, counseling, and emotional support. International studies increasingly support this professional transformation. In an analysis conducted in the United Kingdom, it was observed that nurses within the NHS actively contribute to reducing the incidence of cardiovascular diseases through regular screening sessions and lifestyle education (Smith et al., 2019) [7]. This finding is also supported by our results, where over 60% of respondents reported active involvement in such activities at least weekly.

Another significant aspect is the focus of activities on diabetes and arterial hypertension. This is consistent with WHO recommendations and data reported by the European Chronic Disease Alliance, which indicate that these two conditions represent the leading causes of mortality and disability in Central and Eastern Europe (WHO, 2020) [8]. The fact that nurses in Romania prioritize these pathologies validates their practical orientation and the relevance of preventive interventions carried out.

Regarding the frequency of preventive activities, the values recorded in our study are comparable to those reported in Canada, where national studies show that approximately 70% of primary care nurses carry out educational activities weekly [9]. Similarly, data from the Netherlands indicate that nurses are involved in at least one preventive activity on almost every working day (Van den Berg et al., 2016). Thus, our findings align with a clear international trend regarding the expansion of the nurse’s role.

The patient–nurse relationship is another point of convergence with the literature. Studies conducted in Norway and Sweden show that chronic patients consider nurses more accessible than physicians and provide

greater continuity of care (Johansson et al., 2018). This aspect was confirmed by our questionnaire data, where more than half of respondents reported that patients regularly follow the advice provided, while the case study clearly illustrated how a personalized relationship with the patient facilitates adherence to therapeutic recommendations.

However, it should be noted that there are also limitations in nursing practice, highlighted both in our research and in the literature. The lack of clear national protocols for prevention in family medicine practices, the shortage of adapted educational resources, and insufficient staffing represent common barriers. For example, a study conducted in Poland shows that only 40% of nurses have access to standardized educational materials, leading to significant variation in the quality of preventive interventions (Nowak et al., 2021).

Another critical issue is community involvement. Although over 50% of nurses included in our research reported participation in external activities, these are not consistent or well organized. The same issue is emphasized in German literature, where nurses' participation in community projects is considered voluntary and therefore varies depending on individual motivation and institutional support (Schmidt et al., 2018).

Despite these obstacles, the global trend is clear: the nurse is becoming a key actor in chronic disease prevention. In countries with high-performing primary care systems, such as Denmark and Finland, nurses have advanced competencies in areas such as basic psychological counseling, nutritional education, and community activity planning (Ekdahl et al., 2020). The present study confirms that there is also significant potential in Romania, provided that coherent policies for integrating and strengthening the nurse's role are developed [10, 11].

Finally, the importance of continuing education should be highlighted. The data collected in our research indicate an increased willingness among nurses to participate in training courses in prevention, but also a lack of accessible and relevant opportunities. This gap is also reported in international literature, where professional training is considered essential for skill development and reducing occupational burnout (Green et al., 2019).

In conclusion, the discussion of the results in relation to the literature confirms that the nurse is a central actor in family medicine, with a multifaceted and dynamic role in chronic disease prevention. Although structural and systemic challenges exist, the activities carried out at the individual level, as shown in the questionnaire and case study, have a concrete and positive impact on patients' health. Validating these findings through comparison with studies from other countries contributes to the scientific foundation of robust recommendations for the continued development of the nursing role within Romania's healthcare system.

## VI. CONCLUSIONS AND ORIGINAL CONTRIBUTIONS

- The family medicine nurse plays an active and essential role in the prevention of chronic diseases, going beyond the strictly technical scope of the profession.
- The most frequent preventive activities are those related to monitoring biological parameters (blood

pressure, blood glucose), confirming their integration into daily routine practice.

- The close and long-term relationship between nurse and patient is a key factor for the success of preventive measures.
- Chronic patients demonstrate a high level of trust in nurses, which facilitates health education and treatment adherence.
- The case study demonstrated that preventive activity within the practice can have a direct positive impact on patients' health status.
- There is a significant focus on major pathologies (diabetes, hypertension), in line with WHO data on global morbidity.
- Nurses voluntarily and consistently participate in external activities, but without clear institutional support.
- The lack of standardized and updated educational resources represents a barrier to the effective implementation of preventive interventions.
- Preventive activity is perceived as valuable both by patients and healthcare professionals.
- Continuous professional training is desired by most healthcare workers, but the educational offer is insufficient or inadequate.
- Data from the questionnaire were validated through correlation with international literature and qualitative observations from the case study.
- The research showed that the nurse's role is dynamic and must be supported by public policies in order to reach its full potential.
- Active involvement of nurses in community prevention is still limited, but represents a strategic direction for future development.
- The study contributed to highlighting a preventive care model in primary healthcare adapted to the Romanian context.
- The mixed-method approach (questionnaire + case study) enabled a comprehensive and balanced understanding of the researched phenomenon.
- The paper provides a useful data basis for future research and may support initiatives aimed at improving family medicine services.

The personal contribution consists in the development of an assessment tool (the questionnaire) applicable in family medicine practices to measure nurses' involvement in prevention

## RECOMMENDATIONS

- The development of standardized national guidelines and protocols for preventive activities carried out by nurses in family medicine.
- The expansion of continuing medical education programs for nurses, with an emphasis on chronic disease prevention and patient communication.
- The creation of visual and interactive educational materials tailored to the needs of chronic patients and made available in medical practices. →

- Strengthening collaboration between nurses and other specialists (nutritionists, psychologists, social workers) for integrated prevention.
  - The development of simple digital platforms for monitoring preventive activities and collecting patient feedback.
  - Supporting the organization of preventive activities outside the clinic, in schools, community centers, or public spaces.
  - Allocating dedicated time within nurses' working schedules for health education and preventive counseling.
  - Introducing practical modules on non-communicable disease prevention into nursing education curricula.
  - Encouraging applied research in family medicine, focusing on evaluating the impact of preventive interventions carried out by nurses.
  - Establishing a system of professional recognition and reward for involvement in preventive care.
- Strengthening multidisciplinary teams in family medicine practices, where the nurse has an active and clearly defined role.

### FUTURE RESEARCH DIRECTIONS

- Expanding the study at national level, with a larger and more representative sample, to obtain generalizable data on nurses' preventive activities.
  - Comparing the perceptions and involvement of nurses in urban versus rural areas, where access to preventive services is often more limited.
  - Conducting longitudinal studies to measure the concrete impact of preventive interventions on the long-term evolution of chronic patients.
  - Investigating patient satisfaction with nurses' preventive activities in order to assess the quality of the therapeutic relationship.
  - Exploring systemic barriers (legislative, financial, organizational) that limit nurses' involvement in prevention.
  - Studying the effectiveness of digital interventions (mobile applications, telemedicine, e-learning) in health education carried out by nurses.
- Developing and validating standardized tools for assessing the preventive competencies of nurses in family medicine

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## APPENDIX 1

### Research Questionnaire

**Title:** The involvement of the family medicine nurse in chronic disease prevention through education and support

#### Instructions:

This questionnaire is anonymous and confidential. Your answers will be used exclusively for scientific purposes, within a study on the role of the nurse in chronic disease prevention. Please answer each question honestly.

Estimated completion time: 7–10 minutes.

1. What is your age?
    - under 30 years
    - 30–39 years
    - 40–49 years
    - over 50 years
  2. What is your gender?
    - Female
    - Male
  3. In which county or geographical area do you practice? (open answer)
- 
4. How many years have you worked as a nurse in family medicine?
    - under 5 years
    - 5–10 years
    - 11–20 years
    - over 20 years
  5. Do you work in:
    - Urban area
    - Rural area
  6. How often do you carry out health education activities in your practice?
    - Daily
    - Weekly
    - Monthly
    - Very rarely
    - Never
  7. What types of preventive activities do you most frequently perform? (multiple answers allowed)
    - Nutritional counseling / healthy eating education
    - Smoking cessation counseling
    - Monitoring BP / blood glucose / weight
    - Activities in schools / community
    - Collaboration with other specialists
  8. For which of the following chronic conditions do you most often provide education?
    - Diabetes mellitus
    - Arterial hypertension
    - Obesity
    - COPD
    - Other (please specify): \_\_\_\_\_
  9. Do you consider that patients listen to and follow your preventive recommendations?
    - Always
    - Most of the time
    - Sometimes
    - Rarely
    - Never
  10. Do you participate in preventive activities outside the clinic (schools, community settings)?
    - Yes
    - No