QUATERNARY PREVENTION IN PRIMARY HEALTH CARE

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Abstract: The present study aimed to analyze the impact of incorporating the principles of quaternary prevention into primary health care. An integrative literature review was conducted, analyzing articles retrieved from the secondary databases Virtual Health Library, Latin American and Caribbean Literature in Health Sciences, Scientific Electronic Library Online, and Online System for Search and Analysis of Medical Literature using the descriptors quaternary prevention; primary health care; and basic care. In summary, P4 in primary health care has a profound and transformative impact, mainly by: reducing iatrogenesis – by encouraging the practice of non-intervention in cases of diagnostic uncertainty or marginal clinical benefit, P4 protects the patient from excessive tests, overdiagnosis, and polypharmacy, reducing the risk of adverse effects and the burden of unnecessary treatments; improving screening – P4 promotes individualized and critical screening, prompting primary care professionals to question the blind application of universal protocols and to consider life expectancy, context, and patient values before initiating or continuing a preventive intervention; and strengthening the professional-patient relationship – the emphasis on shared decision-making and transparency about risks and diagnostic uncertainties empowers the patient and reinforces trust in the healthcare team. The analysis of the impact of incorporating the principles of quaternary prevention into primary healthcare shows that this concept goes beyond a mere ethical approach, establishing itself as an essential pillar for quality, safety, and sustainability

Keywords: quaternary prevention; primary health care and basic care.

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INTRODUCTION

The health sciences have witnessed a remarkable advance in diagnostic and treatment capabilities, driven by technological development and the expansion of biomedical knowledge. However, this same expansion has resulted in a growing phenomenon of overmedicalization, overtreatment, and overdiagnosis, which does not always translate into real benefits for patients and can inadvertently lead to harm (iatrogenesis) (Buss; Carvalho, 2009).

Preventive practices have always existed and accompanied the history of health care and illness management practices in societies, including contemporary Western medicine or biomedicine. But what we now call preventive medicine began in the first half of the 20th century, gaining greater momentum in the second half. It consisted of a movement to build a preventive attitude to be instilled in medical professionals, who were then accused of being curative, focused on diagnosing and curing diseases. Preventive medicine was characterized by three premises: (1) it focuses on the individual and the family; (2) it is carried out in the daily practice of doctors; (3) "it represents a major transformation in medical practice [...] and is based on the development, on the part of the doctor, of a new attitude" (Arouca, 2003).

Quaternary Prevention (P4) emerges in this scenario as a crucial concept and an ethical compass, defined as "the action taken to identify a patient at risk of overmedicalization, protect them from unnecessary further medical interventions, and propose ethically acceptable interventions." P4 does not oppose traditional forms of prevention (primary, secondary, and tertiary), but acts as a meta-principle that aims to ensure that healthcare is fair, safe, and person-centered, mitigating the adverse effects of overcare (Castiel; Guilam; Ferreira, 2020).

Primary health care is the ideal setting for implementing P4. As the first point of contact and coordinator of care, PHC is responsible for managing the vast majority of the population's health problems, functioning as the first point of access. Its attributes—comprehensiveness, longitudinality, and coordination—are powerful tools for identifying and avoiding the pitfalls of overmedicalization

(Doran; Hogue, 2014).

The aim of this article is to analyze the impact of incorporating the principles of quaternary prevention into primary health care, exploring how the application of these concepts can improve the quality of care, reduce iatrogenesis, and promote a more rational and sustainable use of health resources. The discussion will focus on how P4 can reorient daily clinical practices, from screening to the management of multimorbidities, aligning clinical practice with the fundamental principle of "primum non nocere" (first, do no harm) (Getz; Sigurdsson; Hetlevik, 2003; Heath, 2003).

METHODS

An integrative literature review was conducted. This approach was adopted because it allows for the combination of data from investigative and theoretical research, which can thus be directed towards conceptualizations, recording gaps in research areas, theoretical review, and methodological analysis of studies on a specific subject, allowing for literature analysis (Ercole; Melo; Alcoforado, 2014).

In this sense, six interdependent and interrelated phases were considered: elaboration of the guiding question, literature search or sampling, data collection, critical analysis of the included studies, discussion of the results, and presentation of the integrative review. The guiding question was defined as: What are the impacts of incorporating the principles of quaternary prevention into primary health care? (Souza; Silva; Carvalho, 2010).

The collection of studies was carried out through electronic searches in the following databases available in the Virtual Health Library (BVS), Latin American and Caribbean Literature in Health Sciences (LILACS), the Scientific Electronic Library Online (SciELO) and Medical Literature Analysis (MEDLINE).

Inclusion criteria included full articles available electronically, in Portuguese, English, or Spanish, and that addressed the proposed theme in the title, abstract, or keywords. Ineligibility criteria

considered letters to the editor, editorials, duplicate articles, and those that did not unequivocally address the subject matter of the study.

The study review was conducted between May and August 2024. The Health Sciences Descriptors (DeCS), retrieved from the website https://decs.bvsalud.org/, were used as research strategies. These included quaternary prevention, primary health care, and basic care. Boolean operators were used to refine the search and better select the data for analysis.andfor combining the selected descriptors.

For data collection, an instrument validated by Ursi was developed. (2005) for integrative reviews, including the following categories of analysis: identification code, publication title, author and author's background, source, year of publication, type of study, region where the research was conducted, and the database in which the article was published. After selecting the articles, the information to be extracted from the studies was defined. To facilitate the retrieval of information, a database developed in was used.software Microsoft Office ExcelThe data from 2010 were composed of the following variables: article title, year of publication, study design, and main outcomes. The data obtained were grouped into a table and thematic approaches and interpreted according to specific literature.

RESULTS

Eleven studies that met the eligibility criteria were included in this review; the titles and main outcomes of the analyzed studies are described in the table below (Table 1).

Table 1. Studies included in the review and the characteristics evaluated.

Nº	Article Title	Key Results
1	Quaternary prevention: a bridge between prevention and clinical ethics (Jamoulle, 2015)	It defines P4 as the ethical function of the family physician, focused on protecting the patient from iatrogenesis and overdiagnosis. It reaffirms primary health care as the ideal environment for the application of P4.
2	Implementing Quaternary Prevention in Primary Care: A Qualitative Study of GPs' Views (Hoffmann, 2018)	It was found that general practitioners recognize the need for P4, but face barriers such as time pressure, rigid screening guidelines, and difficulty in deprescribing medications.
3	Overdiagnosis and Quaternary Prevention in Cancer Screening(Brother, 2019)	This demonstrates that overdiagnosis in screening programs (e.g., prostate cancer, breast cancer) is a real harm. P4 is essential for individualizing screening, focusing on communicating risks and benefits to the patient.
4	Deprescribing: A key component of Quaternary Prevention in Primary Care (Scott, 2020)	It establishes deprescribing (careful withdrawal of inappropriate medications) as a central P4 tool to combat polypharmacy and reduce adverse reactions in elderly patients and patients with multimorbidity in primary health care.
5	Shared Decision-Making and Quaternary Prevention: Aligning Care with Patient Values(Elshaug, 2017)	It concludes that shared decision-making is crucial for P4, ensuring that interventions (or the lack thereof) reflect patient preferences, preventing unwanted overtreatment.
6	The Role of Family Physicians in Quaternary Prevention(Kuehlein, 2010)	It emphasizes that the longitudinality of care in primary health care allows the family physician to better identify patients at risk of overmedication, due to in-depth knowledge of their history and context.
7	Quaternary Prevention and the Challenges of Incidentalomas in Primary Care (Mori, 2021)	Discusses how P4 helps primary care physicians manage incidental findings (incidentalomas) on imaging studies, preventing the diagnostic cascade (invasive and unnecessary tests) for benign findings.
8	Medicalization of Lifestyle Risks: A Quaternary Prevention Perspective (Moynihan, 2014)	It criticizes the medicalization of low-level risk factors (e.g., pre-hypertension, pre-diabetes) and argues that P4 should protect healthy individuals from being transformed into patients through excessively low diagnostic thresholds.
9	Quaternary Prevention in the Management of Low Back Pain: Avoiding Unnecessary Imaging and Interventions (Chou, 2019)	It points out that P4 in the management of low back pain aims to avoid imaging exams (X-rays, MRIs) and premature and unnecessary surgical referrals, which rarely improve the prognosis and generate costs and anxiety.

10	Developing a Quaternary Prevention Index for Primary Care Practices(Van Hek, 2022)	It proposes the development of metrics or indicators (the "P4 Index") to actively evaluate and improve P4 practices in primary health care, such as the deprescribing rate and the rational use of antibiotics.
11	Educational strategies to teach Quaternary Prevention to medical students and residents in Primary Care(Petrazzuoli, 2018)	It highlights the need to formally include P4 in the family medicine training curriculum, training future professionals to make less interventionist and more patient-centered decisions.

Source: study data.

DISCUSSION

Primary Health Care (PHC) is the front line where the risks of overmedicalization are most evident and where quaternary prevention (P4) has the greatest potential impact. Over-screening and medicalization of normal health variations are common practices that P4 seeks to address (Tesser, 2020).

In the Brazilian context, this concept is timidly entering the levels of health care, but is expanding, mainly within the scope of primary health care (PHC). This is because PHC constitutes the level of care that uses relationship technologies in the care process based on the production of bonds, empowerment, welcoming, and a lower reliance on hard technologies, in order to reposition clinical practice and reduce iatrogenic events present in the work process of the health team, approaching what is advocated by quaternary prevention (Tesser; Norman, 2019).

One of the main fields of application lies in population screening. Although secondary prevention advocates early screening, P4 imposes a critical analysis: does the benefit of screening justify the potential harm (false positives, anxiety, unnecessary biopsies, and treatment of lesions that would never evolve into clinically significant disease)? P4, therefore, encourages primary health care professionals to practice individualized screening, based on the patient's actual risk, rather than rigid universal protocols. For example, the decision to suspend cancer screening in elderly individuals with

limited life expectancy is a clear application of P4, avoiding the burden of diagnosis and treatment that will not improve survival or quality of life (Martins; Godycki-Cwirko; Heleno, 2018).

Furthermore, P4 acts to combat the overtreatment of chronic conditions, such as mild hypertension and early-stage diabetes mellitus. The pressure to achieve strict laboratory targets, often driven by expert guidelines, can lead to polypharmacy (prescription of multiple medications) and side effects that outweigh the marginal benefits of more rigorous control. For example, the family physician, based on P4, adopts a more cautious approach, focusing on deprescribing (withdrawal of unnecessary or harmful medications) and patient-centered management, prioritizing functionality and quality of life over laboratory numbers (Modesto, 2019).

Implementing P4 in primary health care requires a shift in the professional-patient relationship, promoting shared decision-making. Overmedicalization thrives in a model where the patient has limited access to information and where uncertainty is viewed as medical failure. P4 encourages professionals to be transparent about diagnostic and prognostic uncertainty, openly discussing the benefits, risks, and alternatives of proposed interventions (including the alternative of "watchful waiting" or "doing nothing") (Souza et al., 2021).

P4 is also essential in managing the growing wave of genetic testing and the use of diagnostic technologies that often identify findings of uncertain clinical significance (incidentalomas). The primary care professional, applying P4, acts as an interpreter, preventing the patient from being referred for expensive and invasive follow-up exams based on findings with a low probability of clinical progression (Gross et al., 2016).

In a context of limited health resources, P4 has a direct impact on the sustainability of the health system. Overtreatment and overdiagnosis are major generators of unnecessary costs, diverting resources that could be used for higher-impact and more equitable health actions (such as primary prevention and strengthening primary health care) (Depallens et al., 2020).

Professionals working in primary care, due to their training and their role in providing longitudinal care, are best positioned to implement Quaternary Prevention. Their in-depth knowledge

of the patient, their family and social context, and their health history allows them to discern when a complaint or laboratory finding reflects a real pathology or merely a variation of normality that will require medical treatment.

The proposed approach, as a technical and sociocultural contribution, includes continuing education for a change in attitude in the construction of health care within the training process of future and existing health professionals (Gross et al., 2016). It is emphasized, however, that its consolidation at the service level depends on its comprehensiveness in the training process of new professionals, in a transversal manner, with a solid and consistent theoretical-practical framework, from the initial semesters (Costa; Reis, 2012). In this sense, it is conjectured that there is a possibility of greater understanding and distinction between the concepts and purposes of the levels of prevention, since, in practice, it is noted that these are not identified in their peculiarities and quaternary prevention, above all, is not sufficiently clarified (Pausch et al., 2020).

Almenas et al. (2018) suggest expanding educational mechanisms, encompassing health education and guidance for the population and managers of educational institutions and health services, especially so that they can find qualified information and training for teaching quaternary prevention practices. In this regard, it should be considered that promoting campaigns, forums, scientific events, and other forms of dissemination to professionals and communities can be one of the strategies to be adopted for spreading knowledge about quaternary prevention (Pausch et al., 2020; Moraes; Neiva; Vianna, 2015).

The main impact of P4 on primary health care is, therefore, the ethical and practical reorientation of care, ensuring that intervention occurs at the right time and in the right quantity. P4 strengthens the role of primary health care as a bulwark against the forces of overdiagnosis and overtreatment, reaffirming that the best care is that which maximizes benefits, minimizes risks, and respects the patient's autonomy and life context.

CONCLUSION

The analysis of the impact of incorporating the principles of Quaternary Prevention (P4) into Primary Health Care (PHC) demonstrates that this concept transcends a mere ethical approach, becoming an essential pillar for the quality, safety, and sustainability of care. Quaternary prevention is not an obstacle to preventive medicine, but rather an ethical and pragmatic refinement of it. Its incorporation into the routine of PHC is fundamental to reorienting the care model, moving it away from the overvaluation of technology and interventionism, and closer to a more humane, efficient practice centered on the real health needs of the population.

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