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Professional Positioning of General Practitioners in the Management of Postmenopausal Osteoporosis in Community Medicine

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Abstract: INTRODUCTION: While postmenopausal osteoporosis management evolved in recent years, it nonetheless remains underdiagnosed and undertreated. Given that general practitioners are the keystone of patient screening and referral in France, the present study was conducted to assess their professional positioning in the management of postmenopausal osteoporosis. METHODS: The present is a qualitative study based on semi-directed interviews, carried out between July 2020 and February 2021, with randomly chosen Alsatian general practitioners. Interviews were conducted until data saturation. Consolidated criteria for qualitative research reporting grid was used as well as Nvivo software to categorize the datas. RESULTS: Twenty-three general practitioners (GPs) were interviewed. Study participants recognized that the investigation and treatment of osteoporosis begins at a primary care level, typically with the GP. While some initiated screening by prescribing bone mineral density (BMD) assessments, only few prescribed the associated laboratory assessment and spinal X-rays in search of curable osteopathy or vertebral fracture. For those GPs who do take the opportunity to initiate treatments for patients, there is an understanding that first line options often include calcium and vitamin D, at a "preventive" level. The interviewed physicians interacted mainly with gynecologists and rheumatologists. Fracture liaison services were widely acclaimed. Several barriers were identified in their care management. The absence of a defined role between specialists and the lack of communication between the latter were an additional highlighted barrier. CONCLUSION: This study sheds further light on the discrepancy between the means available to treat osteoporosis, and the modest impact of the care observed.

Keywords: osteoporosis; society; public health; general practitioners; formation

I] Introduction

Postmenopausal osteoporosis is a silent disease whose main consequence is fractures. Given its increasing incidence due to the aging of the European population, its individual and collective impacts make it a growing public health concern [1]. The latest report from the International Osteoporosis Foundation (IOF) estimated at 4 million the number of affected individuals in France in 2019, corresponding to an impact of approximately 7 billion euros per year on the health system [1].

In France, bone mineral density (BMD) assessment is reimbursed in a large number of cases, as well as anti-osteoporosis treatments. Despite the latter, osteoporosis remains both underdiagnosed and undertreated. There is indeed an overall decrease in screening [2] along with a low proportion of patients treated. Accordingly, the latest IOF report estimated at 80% the proportion of eligible but untreated patients in 2019 [1].

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This mismatch between available therapeutic means and the lack of tangible results observed raises a number of questions regarding the effectiveness of current approaches to the investigation and management of post-menopausal osteoporosis.

While the French national recommendations for the management of osteoporosis are aimed at multiple stakeholders (general practitioners, rheumatologists, geriatricians, gynecologists, orthopedic surgeons, etc.), the question remains as to whether these professionals feel particularly concerned by osteoporosis [3].

Professional positioning is defined as a process of reflection leading to decision-making in a specific situation and which answers the questions: "What is my role regarding this disease, and how do I fulfill this role?" [4].

Given that general practitioners are the keystone of patient screening and referral in France, the present qualitative study was conducted to assess their professional positioning in the management of postmenopausal osteoporosis.

The qualitative methodology was favored to avoid inducing data based on a priori assumptions.

II] Methods

Health care system in the Alsace region

Alsace is a 8280km² region in northeastern France, with a population of 1,884,150 people as of January 1, 2019. Access to doctors and BMD in the region is high [5].

They were 2939 general practitioners in Alsace in 2020 according to the Institut National de la statistique et des études économiques open datas (INSEE). Health insurance is compulsory for all French residents.

1). Design

A qualitative method was chosen to collect non-induced responses in order to obtain key elements of response to our initial study question.

The study was based on face-to-face semi-directed interviews, conducted between 1st of July 2020 and 27th of February 2021, with general practitioners in Alsace, France.

The consolidated criteria for reporting qualitative research (COREQ) were used to assess the validity and rigor of the study.

No patient or member of the public were involved in the design, conduction, report or dissemination plans of this research.

1). Recruitment

A list of all Alsatian physicians was compiled from an online directory (www.pagesjaunes.fr). A random draw was performed within the list, and physicians were selected consecutively. The sample was intended to cover the diversity of the population surveyed. To aim at heterogeneity of sex, age, type of practice and areas of activity, if a drawed physician belonged to an overrepresented category, we kept drawing randomly.

The physicians were contacted by telephone, via their professional contact information, to inform them of the study's objectives, and schedule an appointment for the interview.

If the physician declined to participate in the study, the random draw was continued.

The inclusion criteria were as follows: being a general practitioner and practicing in Alsace. Prospective physicians were approached until data saturation was reached.

The only non-inclusion criterion was the physician's refusal to participate.

The general practitioners were not offered any reimbursement for the participation.

1). Data Collection

An interview guide was developed in consultation between the authors, with the aim of targeting the desired themes and to channel the interviews toward the study's objectives. As planned

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initially, the guide was adapted after a pilot interview (see supplementary material). New version of the guide was shorter and broader.

The topics covered included the study of the representations of osteoporosis, GP positioning with regard to its diagnosis and management, as well as exploration of the challenges and difficulties encountered. The questions were purposely open-ended to facilitate the emergence of themes.

The interviews took place at the practitioners' office and were audio recorded.

The interviews were conducted by FH until data saturation was reached, i.e. until the new interviews did not produce any new value-added data.

A questionnaire covering demographic data was given to and completed by the physicians prior to starting the interview.

1). Data Analysis

The recordings were initially transcribed manually by FH.

Using the Nvivo software, we conducted a thematic analysis inductively.

Each idea emerging from the interviews was coded according to occurrence, with consolidated occurrences grouped into themes. Verbatim statements were then selected to illustrate these themes. Identified themes derived from the data.

Interviews and coding were conducted in French. Selected quotes used in the present article were translated into English during manuscript preparation and reviewed by a native scientific editor.

In order to improve the reflexivity and reliability, two independent analyses were performed in parallel (LS and FH); in the event of a mismatch, a discussion was held to reach a consensus.

1). Ethical Considerations

Each participant signed a consent form to participate in the study as well as an agreement for the audio recording.

The confidentiality of the data was ensured by anonymization of the interviews.

All non-anonymized documents were locked in a safe room at the Pasteur hospital.

The study was carried out in accordance with the Declaration of Helsinki, current bioethics laws and the CNIL Data Protection Act.

It is entered in the treatment registry of the University of Strasbourg (n°1/379).

III] Results

1). Description of the Population

Thirty-three physicians were contacted, 23 of whom participated in the study. The main reason for refusal was lack of time.

Table 1. Sociodemographic characteristics of the participants (n= 23):.

Sex (women) %	**39**
Mean age (extreme values)	41 (33-67)
30 – 39 years %	44
40 – 69 years %	56
Place of practice	
Municipality < 2000 inhabitants %	22
Municipality 2000-10 000 inhabitants %	48
Municipality > 10 000 inhabitants %	30
Solo practice (vs. group practice) %	30

The interviews lasted between 8 and 38 minutes.

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1)1). Data Presentation

Representations of osteoporosis and professional positioning of the general practitioners
The interest in bone disease was uneven. Some physicians reported an interest in the disease.

"On a scale of 0 to 10, I would still lean more toward 7 – 8 in order to be preoccupied about it"; "It is nonetheless a disease that is important to manage, especially for its consequences."Female physicians or physicians with a personal or family history of osteoporosis were seemingly more aware of the disease.

"Osteoporosis interests me. In fact, I have a personal [experience] of osteoporosis, indeed it is true that I fell a few years ago, I suffered a fracture at the time..."

But overall, bone disease was not considered a priority.

"I am not saying that it does not interest me at all, that is not what I am saying, but for the time being it is not an important axis in my practice."

Study participants generally recognized that the investigation and treatment of osteoporosis begins at a primary care level, typically with the GP.

"The major person in this story is the general practitioner…"; "For me, that, that still remains primary care medicine, it does not bother me to say it. "

Some physicians initiated screening, mostly by prescribing a BMD assessment.
The initiation of management was increasingly at the initiative of the patients.

"They ask and thus I have a lot of bone densitometry prescriptions requests and therefore the diagnoses are made, I believe, to some extent... Perhaps earlier than what I experienced a few years ago."

For those GPs who do take the opportunity to initiate treatments for patients, there is an understanding that first line options often include calcium and vitamin D, at a "preventive" level.

"well, we typically start a treatment with [ ]… calcium… [ ] vitamin D."; "The prevention of that, well, it is still fundamental, though."

Moreover, GPs reported renewing prescriptions for patients when prescribed by others, but only a few claimed to initiate anti-osteoporotic treatments themselves.

"[treatment] initiations, I do not perform many I believe, at least not at the moment... renewals, yes, there are a lot of them."; "depending on the result, we treat if there are no contraindications."

Certain physicians claimed to be fully autonomous in their care management.

"No, I am not going to say that osteoporosis is easy, but I do find that there is somewhat of a guiding pattern that makes sense. And so suddenly, once we have understood that a little, I find that it is easy in community medicine to follow it."

Many stated having interactions with other health stakeholders. Gynecologists participated in screening, prescribed BMD assessments, introduced hormonal treatments, but not other anti-osteoporotic treatments. Some gynecologists referred to the attending physician for the interpretation of the results. Communication was considered difficult with sparse interaction between specialists. Rheumatologists were asked to confirm the diagnosis of osteoporosis, perform BMD tests, and

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initiate 1st- or 2nd-line treatment or intravenous treatment. They were notably called upon for cases deemed complex or for male osteoporosis, for reassessments, sometimes due to lack of knowledge or at the request of the patients.

In terms of fracture liaison services (FLS), physicians stated they were generally satisfied with the follow-ups and instructions sent to them:

> "It did a lot to ensure more testing. When I first started, there was no such type of reflex with regard to fractures."

Certain physicians were very satisfied with their care management. However, others said they felt guilt, regret, and discomfort in dealing with osteoporosis. They also evoked weariness in the face of patient non-compliance.

> "So I have to be honest, it is still often a little too late (…) or you simply carry out your work-up. Therefore, that is not good."; "I think it is underdiagnosed and undertreated! It is somewhat of a shame because it is among the things we know how to treat."

Identified barriers in the management of osteoporosis:

The elicitation of professional positioning was often illustrated by the difficulties and barriers encountered.

A general lack of knowledge of the disease was frequently cited, ascribed to a lack of training and experience. The decrease in medical visits as well as the decline in continuing medical education were cited as being responsible for their decreased awareness of osteoporosis.

> "Specific training on osteoporosis, I must confess, I believe that, outside of university, I have not had any."; "There was a time when we talked about that more often, we had a lot of lab visits. We were much more influenced at one time. "

The severity of osteoporosis was often downplayed.

> "We do not really think about it, the person comes in for another reason, maybe there are other diseases that are more serious. ";"in my mind, I would place it in the « not very serious » [category] in the end. "

Additional assessments were rarely performed, the associated laboratory assessment and radiographs of the spine in particular were rarely mentioned.

> "parathormone and serum calcium. That, I should think about it more. It does not fit into my standard assessment but it should be done. "

The use of diagnostic and therapeutic tools (indication, prescription, follow-up) was often considered problematic.

> *"It is not highly well codified, [as to] who must undergo a BMD assessment or not. "*

> *"Sometimes the indication is somewhat borderline. "*

> *"We gave bisphosphonates (…), then came a time when "yes, but beyond 5 years we do not have any data", therefore we decided to stop (…) "*

Therapeutic agents and their treatment modalities were not always known, and some physicians expressed doubts as to the effectiveness of the treatments and the relevance of the new recommendations.

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"I do not really know when to introduce it, well, it is not... I find we do not have a clear frame of reference. "

"something vast that we are in... it is a very vast field, we put a lot of things into it... and then I feel we do not really know. "

Concerns were expressed regarding the tolerance of the treatments.

The withdrawal of certain medications from the market in the past, and the management of patients who took them were still on the minds of certain physicians.

"The question of osteonecrosis of the jaw, it's not exceedingly clear ".

"We were perturbed by Protelos which, huh, clipped our wings because of the increased risk of thrombosis, huh, a few years ago and that... 10 years ago it was a bit complicated. "

The lack of time in consultation was also reported by several physicians as a barrier to care management.

"Ultimately, it takes a long time to make a diagnosis of osteoporosis in a general medicine consultation. "

The absence of a defined role and lack of communication between specialists were an additional highlighted difficulty.

"Ok, so who takes care of what? Is it the gynecologist because we are in the post-menopause phase? For me it could be the gynecologist, for me it could be us, but uh for myself, I feel like I am stepping on someone's turf, I hate it when people step on mine, therefore as such... "; "already they rarely communicate with us, if not at all. "

Lastly, some physicians mentioned issues related to patients themselves (non-compliance, poly-medication, poor understanding).

IV] Discussion

The aim of the present study was to assess the professional positioning of general practitioners in the management of postmenopausal osteoporosis. The interviews revealed that physicians consider themselves central in the management of the disease, although their interest and degree of involvement vary.

While many professed giving consideration to osteoporosis, few were those who actually screened for the disease on a regular basis and managed the latter according to current recommendations. A certain number of physicians evoked more of a "preventive" role with regard to osteoporosis rather than an actual global management scheme encompassing screening, treatment and follow-up. Many still considered other diseases as priorities, and thus relegated osteoporosis to the background in terms of patient management.

A study by Otmar et al. had already highlighted an ambivalence regarding the perception of osteoporosis, in which confidence in the efficacy of treatment medications was often overshadowed by concerns as to the potential financial burden among low-income patients in a country where social security coverage is less effective than in France [6]. More recently, Merle et al. studied the barriers to the screening of osteoporosis in France, and confirmed what other studies had already underscored, namely: general practitioners feel less concerned by osteoporosis than by other more salient diseases [7,8].

Some physicians stated being autonomous in their care management, although many declared interacting occasionally or systematically with specialists.

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The preferred stakeholders were the gynecologists and rheumatologists. Gynecologists often initiated screening by prescribing BMD tests, although did not initiate treatment other than hormone replacement. Rheumatologists were often cited as a resource to carry out BMD tests, confirm the diagnosis, initiate treatment, occasionally as second-line treatment or in non-typical cases. They were sometimes called upon for full management support.

Orthopedic surgeons were unsurprisingly not cited, as in many countries. In France, their focus is to provide frontline treatment of fragility fractures, and eventually refer patients to FLS.

Interactions between specialists have been sparingly studied. According to the SCOPE 2021 report by Kanis et al., the majority of patients with osteoporosis in France are preferably managed by general practitioners, which contrasts with our current findings [1]. As a matter of fact, unlike other countries around the world, the management of osteoporosis is traditionally carried out by rheumatologists in France. Hitz and al. further underscored the importance of the role of general practitioners in the management of osteoporosis by highlighting better primary adherence to treatment when prescribed by the general practitioner rather than by a specialist [9]. However, Merle and al. conversely highlighted, as in our study, the intricate interaction of several specialties in the management of the disease [7]. The confidence of GPs regarding the accuracy of the rheumatologists' BMD reports has also been previously described [10].

The recent appearance of FLS programs was furthermore underlined in the present study and hailed by the physicians who evoked them, in keeping with the direction of the continued development of these programs.

Notwithstanding the above, the general feeling that emanated from the management of osteoporosis was mixed, with rarely total satisfaction, but most often the sentiment of having to and being able to do better.

To our knowledge, this is one of the first studies specifically studying the professional positioning of general practitioners with regard to postmenopausal osteoporosis, based on semi-directed interviews.

Analysis of our interviews also enabled shedding light on the barriers associated with the current disparities in care management, allowing a better understanding of the positioning of general practitioners.

One of the major barriers observed was a lack of overall knowledge of the disease and management recommendations (diagnosis, treatment, follow-up), the primary reason being the lack of academic training in this regard. Some practitioners associated the latter with the reduction in the number of medical visits, which normally contributed to their continuing medical education.

Despite a simplification of the French national recommendations in 2018, disease management remains indubitably complex. BMD assessment reimbursement criteria are difficult to grasp in general medicine; moreover, the emergence of new therapies with specific indications, their precise management within the framework of evolving therapeutic sequences, the discontinuation of certain treatments (strontium ranelate) as well as prescriptive restrictions for others (denosumab) are all elements contributing to the complexification of management care. A theoretical training, at the very least, appears essential to any practitioner who manages osteoporotic patients.

Such need to strengthen medical training has also been underscored by several studies, including some more than 20 years ago [7,11–13]; unfortunately, the time allocated to medical training in the management of osteoporosis has been reduced by half since the publication of most of these studies.

The lack of experience reported by certain interviewed physicians should be put into perspective, given the lack of internship in a specialized environment during their medical training, and relying more on the knowledge and habits of the internship supervisor, the majority of internships in general medicine now conducted on an outpatient basis.

The absence of allocation of roles between specialists as well as communication issues between some of the stakeholders added further difficulty to the management of the patients. As already described by Merle et al., there was a fear of redundancy in the prescribed medications, which often

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led to a loss of opportunity for the patient. Such necessary coordination between specialists has already been raised in other studies [14].

Patient-attributed barriers to care management were also highlighted, with non-compliance being the first and foremost barrier, or the difficulty in introducing a first treatment in a naive patient. These barriers have also already been described [15].

The role of a therapeutic alliance centered on shared decision-making is essential. In this context, complete and sustained medical information, particularly during diagnosis and treatment initiation, is essential.

Certain solutions to improve the management of patients with osteoporosis have emerged from the present study, most of which stem from the general practitioners themselves, as outlined in Table 2 below.

Table 2. Emerging solutions:.

Enhance initial university education and offer postgraduate training to all physicians involved in the management of osteoporosis
Raise awareness among GPs and the general public to the severity of the disease
Continue the deployment of fracture liaison service programs
Create consultations devoted to screening to compensate for the lack of time in consultation
Continue to simplify recommendations, by defining roles and improving communication between specialists

The present study has certain limitations both methodolical and inherent to the qualitative methodology chosen. Indeed, there may have been a selection bias whereby the investigator's own status as a physician may have modified the responses of the GPs interviewed, who could have considered the interview as a test of knowledge. It was FH first interview experiment. We considered that we had reached the data saturation threshold, but it is possible that by increasing the number of interviews, we may have highlighted another theme. To assess the validity of our results, we could have tested the transferability of our results. However, the format was adapted to address this issue. The interviewed physicians were reminded prior to conducting the interviews that it was not an assessment of their professional practices, and that anonymization of the interviews was guaranteed. Finally, the COREQ guidelines were followed in order to ensure the best possible methodological quality.

Conclusion:

This study is one of the first to investigate the professional positioning of general practitioners in France, with regard to postmenopausal osteoporosis.

It sheds further light on the discrepancy between the means available to treat this disease, and the modest impact of the care observed.

The general practitioners interviewed mostly recognized their essential role in the management of osteoporosis, but reported a number of significant barriers limiting their diagnostic approach and the initiation of treatments.

Improving the training of physicians, raising the awareness of all professionals concerned, and clarifying the role of each of the latter are all solutions that emerged from our work to improve the care management of patients.

With regard to the personal and societal impact of the non-management of osteoporosis, the study of both the macroscopic (organization of care, initiation of prescriptions, number of fractures, etc.) and microscopic medical functioning (positioning, personal barriers, etc.) as performed herein is warranted in order to define pragmatic areas for improvement.

This study of professional positioning could be applied to other stakeholders in the management of osteoporosis in order to map the health ecosystem in this frequent disease, and to better define the movement and effective direction of patient flow.

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Contributorship: LS: RMJ and FH designed the study, FH performed the interviews, LS and FH analysed the data, LS wrote the manuscript, LM and PMD provided critical feedback and helped shape the research.

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Ethical Approval: Not applicable according to french Jardé law.

Data Sharing Statement: Data are available upon reasonable request.

Competing interests: Lionel Spielmann, Fleur Heimendinger, Pierre-Marie Duret, Laurent Messer and Rose-Marie Javier do not have any conflict of interest to declare.

Patient and Public Involvement Statement: No patient or member of the public were involved in the design, conduction, report or dissemination plans of this research.

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