

Needs and Wishes Towards Sex- and Gender-Sensitive Chronic Pain Management: A Qualitative Study with German General Practitioners

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Purpose: This study is part of the GESCO feasibility project (funded by the German Federal Ministry of Health) aimed at developing a sex- and gender-sensitive primary care intervention for patients with chronic non-cancer pain (CNCP) receiving long-term opioid therapy (LTOT). To inform the intervention design, we explored general practitioners' (GPs) experiences and needs in managing this patient group, with a particular focus on the role of sex and gender.

Methods: We conducted semi-structured telephone interviews with five GPs in Germany using a convenience sample. Interviews were transcribed verbatim and analyzed using the Rapid approach to integrate findings quickly into the broader project.

Results: Treating patients with CNCP and LTOT is highly complex and emotionally demanding. GPs described feeling caught between patients' high expectations and their own limitations, which often strained therapeutic relationships. Gender dynamics played a key role in shaping these interactions. While male GPs emphasized neutrality, underlying gender stereotypes still influenced their behavior. Female GPs reported stronger trust with female patients, while male GPs described a greater focus on asserting control. Stigmatization—especially affecting female patients—was reported to hinder open communication and trust. GPs expressed the need for more time, better training in gender-sensitive care, and stronger interdisciplinary collaboration.

Conclusion: To improve care for patients with CNCP and LTOT, recommendations include: extending consultation times with adequate reimbursement, ensuring comprehensive medical histories, enhancing GP training in gender-sensitive care, improving diagnostic tools, and promoting peer collaboration. Further measures involve supporting patient self-management, empathy, and communication, as well as adopting a biopsychosocial and sex- and gender-sensitive approach to treatment.

Keywords: long-term opioid therapy, chronic non-cancer pain, chronic pain in general practice, sex- and gender-sensitive medical care, needs assessment

Introduction

Chronic non-cancer pain (CNCP) is a common condition worldwide that is often treated with opioids.^{1–3} However, there is evidence that only a small proportion of patients benefits from long-term opioid therapy (LTOT) in terms of pain relief.^{4–7} Inadequate treatment can contribute to an increased risk of opioid abuse and pain chronification, as well as potential resignation among patients and physicians.^{5,8} Current research suggests that gender is a crucial factor influencing the complex pathogenesis, disease progression, and treatment experience. This applies to biological, psychological, and social aspects.⁹ Studies indicate that, on a biological level, hormonal factors, immune system functioning, and

neurochemical mechanisms contribute to gender differences in pain processing and perception.^{9–11} This relationship also affects how medications, particularly opioids, exert their effects.¹¹ Moreover, gender influences the prevalence of chronic pain and its comorbidities, interacting dynamically with psychosocial factors.^{9,10} Internalized gender roles impact pain tolerance,¹² also men and women employ different coping strategies.¹³ Furthermore, gender plays a crucial role in shaping the doctor-patient relationship.^{14,15} Research has shown that communication in medical consultations is influenced by the gender of both the physician and the patient.¹³ Additionally, treatment preferences vary: women tend to benefit more from multimodal treatment approaches or group therapy.¹⁶ However, it remains unclear how these aspects manifest in the daily practice of general practitioners and what specific needs and preferences they have regarding gender-sensitive pain management.

In this project, the following scientific definitions provide the framework for our work: Chronic pain is a subjective phenomenon that is shaped by an interplay of biological, psychological, and social factors.¹⁷ The term “sex” is typically operationalized by biological markers, including the presence of primary and secondary sex organs, chromosomal composition, and hormone concentrations.¹⁸ The categorization of sex typically follows a binary system, with individuals designated as either female or male, or alternatively, belonging to the intersex category.¹⁹

The terms “sex” and “gender” are distinct concepts. Gender is a social construct that encompasses roles, identities, and relationships. There is a spectrum of gender identities that individuals may identify with and express themselves through, comprising a range of possibilities that extend beyond the traditional binary of male and female.¹⁹ The concept of gender is multidimensional and complex, shaped by social norms and values.²⁰ It affects how individuals perceive themselves, how they interact with others, and the distribution of power and resources within society.¹⁹ Moreover, gender interacts with other socio-cultural categories, including socio-economic position.¹⁸ The gender designations used in the results section of this study are based on self-attributions made by the physicians, as well as external attributions that the physicians assign to the patients they describe to us. The term “sex and gender-sensitive intervention” denotes the incorporation of biological, psychological and social aspects of sex and gender into the therapeutic process, as specified by Engel’s biopsychosocial model.²¹ The model has been instrumental in the development of a comprehensive treatment approach that transcends a solely somatic perspective.

The present study forms part of a larger feasibility project (GESCO funded by the German Federal Ministry of Health, funding numbers 2522FSB14A/2522FSB14B) to develop, pilot and evaluate a sex- and gender-sensitive primary care intervention for patients with CNCP receiving LTOT (the GESCO intervention),²² following Pearson et al’s Guidance for conducting feasibility and pilot studies for implementation trials²³ and the updated MRC Framework.²⁴

The GESCO study comprises two phases.²² Phase 1 involves the development of the intervention incorporating a qualitative needs assessment with GPs and patients, a literature review, and the elicitation of a theory of change. The second phase of the study will entail pilot testing the intervention in ten general practices with 40 patients with CNCP and LTOT in an effectiveness-implementation hybrid design²³ including a single-arm, pre-post comparison to determine preliminary effects and a mixed-methods process evaluation focusing on feasibility criteria, both in preparation for a subsequent larger effectiveness trial.²³

The present study is part of the intervention development in project phase 1, and reports on the qualitative needs assessment with GPs experienced in the treatment of patients with CNCP and LTOT. In Germany, general medicine is a specialized discipline with a specialist examination. General practitioners are the primary initiators and managers of opioid therapy.²⁵ Therefore, they represent the most suitable target group for the planned intervention. In order to explore the experiences, needs and wishes of GPs and to derive information for the development of a gender-sensitive intervention, the following questions are addressed:

- What are GPs’ experiences in the management of patients with CNCP and LTOT?
- What is the role of sex and gender in this context from the perspective of GPs?
- What wishes and needs do GPs express with regard to future improvements in the primary care of patients with CNCP and LTOT?

Materials and Methods

Design

A qualitative study with five semi-structured telephone interviews were conducted with a convenience sample of German GPs experienced in treating patients with CNCP and LTOT. The participants were recruited via academic conferences and educational training events organized by the Institute of General Practice and Primary Care (Faculty of Health, Witten/Herdecke University, Germany) from October to December 2022. Only individuals who are specialists in general medicine and have practical experience with chronic pain management in the general practice setting were included. A semi-structured interview guide was developed in a participatory workshop with patients, GPs and the project team using the Collect, Review, Sort, Summarize method.²⁶ This study is reported according to the COREQ guidelines²⁷ (see [Appendix 1](#)).

Setting, Sample and Data Collection

All interviews were conducted in early 2023 (January to February) by a researcher from the GESCO project (AP, public health scientist). After the interview participants completed a brief survey on demographics. As part of the interview, participants were posed open-ended questions from a semi-structured interview guide pertaining to their knowledge, attitudes, and perceptions regarding pain management, opioid prescribing, and gender-sensitive medicine (see [Appendix 2](#)). Follow-up questions were employed to gain further insights or clarify responses. The interviews were conducted via telephone, audio-recorded, and lasted between 38 and 60 minutes. Participants received no financial compensation. Written consent was obtained from all participants regarding the recording of the interviews, data analysis and publication, including verbatim quotes. The study was approved by the Ethics Committee of Witten/Herdecke University (no. 138/2022).

Data Analysis

The audio files underwent verbatim transcription and were subsequently subjected to analysis using the Rapid method, which is a form of directed content analysis²⁸ to ensure that the findings could be incorporated into the project in a timely manner. Previous research has shown that rapid qualitative data analysis approaches deliver equivalent results with fewer resources compared to more traditional qualitative analysis methods.^{28–30}

The rapid analysis comprised the following steps: The primary analyst (AP) pre-prepared an Excel matrix based on the draft of Nevedal and colleagues²⁸ by applying seven deductive categories which were derived from the interview guide. AP organized the data material into the pre-prepared Excel matrix, supported by LG. The secondary analyst (NS) subsequently reviewed the matrix, checked the transcripts, and made any necessary edits or additions to the primary analyst's notes. The analysts utilized comments and highlighting within the matrix to indicate sections of text that warranted further discussion. Discrepancies were resolved through discussion (AS, LG, NK, AP, AM). An excerpt of the coding scheme is provided in [Table 1](#). Analysts met on a regular basis to resolve any discrepancies and refine the matrix. The primary analyst reviewed the notes and wrote a high-level summary for each category in the matrix. The secondary analyst then reviewed the matrix and made necessary edits to the high-level summaries. The analysts convened on a regular basis to discuss and resolve any discrepancies. The results are presented according to the research questions. For this purpose, individual categories were summarized into three themes: Theme 1: Experiences in the care of patients with CNCP and LTOT; Theme 2: The role of sex and gender in pain therapy; Theme 3: Needs and wishes regarding sex- and gender- sensitive pain management.

Patient and Public Involvement

The GESCO project benefits from the input of an advisory board comprising patient representatives, GPs, and experts from a range of relevant fields (eg, pain therapy, psychology). At the beginning of the GESCO study, a participation matrix was employed to plan and reflect the roles of stakeholders, thereby ensuring that their perspectives were duly considered throughout the course of the study.³¹

In the context of the present study, patient representatives from our advisory board participated in the development workshop for the interview guide and research questions. Based on the findings of the present study as well as other sub-

Table 1 Overview of Research Questions, Corresponding Categories and Anchor Citations

Research Question	Categories	Anchor Citations
Theme 1: Experiences in the care of patients with CNCP and LTOT		
What are GPs' experiences in the management of patients with CNCP and LTOT? a. What expectations do patients have towards their GPs? What challenges arise? b. What experiences have been made with opioid therapy?	1. Exemplary patient/case 2. Expectations towards GP 3. GPs' experiences with opioid therapy	"It's just very, very difficult. And this often leads to conflicts with patients or therapists, or helplessness on the part of the therapist, for example, and frustration on the part of the patient. The patient feels misunderstood; the therapist says, 'we've already tried this and that, now it has to improve,' and looks forward to an improvement, but then the pain comes back. It does not work. And at some point, you have less room to maneuver." (Interview 5, female, 46 years).
Theme 2: The role of sex and gender in pain therapy		
What is the role of sex and gender in this context?	1. Sex and gender of the patient 2. Sex and gender of the GP	"If I were to generalize about men and women regarding pain, I would say that women's pain is often more an expression of their psychological state. They may also be more receptive to addressing psychological components of their pain, whereas for men, it's more about something being 'broken' that needs fixing—a kind of car repair mentality, if you will. It's often even harder to explain psychosomatic connections or pain amplification models to them." (Interview 2, female, 59 years). "Yes, I absolutely believe so. [...] For example, I think that some women, particularly those from the older generation, come in with different expectations when they realize that it's a female doctor rather than a male one. Over time, I believe it makes some of them feel more comfortable, allowing them to open up or share things they might not otherwise disclose." (Interview 5, female, 46 years).
Theme 3: GPs' needs and wishes regarding sex- and gender- sensitive pain management		
What wishes and needs do GPs express with regard to the care of patients with CNCP and LTOT?	1. Wishes regarding sex- and gender-sensitive care 2. Wishes regarding information and trainings	"At the top of the list would be more time, which should also be adequately reimbursed. For me, that is the most essential aspect and the biggest issue here—that the necessary consultations are not adequately compensated." (Interview 4, male, 45 years). "We could try to separate the subjective from the objective a little and identify whether the patient really needs more pain therapy or perhaps a different way of managing their pain, or more support from their social environment, or whatever else might be necessary." (Interview 5, female, 46 years).

studies, they will thereafter be involved in the intervention design (which will be published separately). They will also contribute to the subsequent stages of the project (eg, data interpretation, dissemination of results).

Results

Five medical doctors working as GPs were interviewed. Two of the participants were women and three were men, with ages ranging from 45 to 70 years and professional experience ranging from 18 to 43 years. Four of the respondents indicated that they work in small town environments (20,000 to 100,000 inhabitants), one respondent indicated to work in a city with more than 100,000 inhabitants within differently organized practices, including one “group practice”, one “individual practice”, and three “joint practice” models. The number of consultations per quarter ranged from a high of more than 2000 for three respondents to fewer than 1000 for one respondent, and between 1000 and 2000 for another respondent. The GPs had several additional qualifications: addiction medicine (2), alternative medicine (2), sports medicine (1), emergency and palliative medicine (2), geriatrics (1), and anesthesia (1).

In the first part of our findings, we explore how GPs experience the daily care of patients with CNCP receiving LTOT. Subsequently, we discuss the role of sex and gender in this context. Finally, we present the GPs’ perspectives on their needs and wishes for a gender-sensitive approach to pain management in primary care.

Experiences in the Care of Patients with CNCP and LTOT: The Therapeutic Impasse

The GPs reported encountering patients whose expectations are often unrealistic:

Ideally, she wants the pain to go away completely and regain her old quality of life. And, yes, I try to explain to her again and again that pain management can only aim to make the pain tolerable, not eliminate it entirely [...] anything you do isn’t really helpful in the end [...]. (Interview 2, female, 59 years)

The same GP repeatedly attempted to adjust the patient’s expectations by emphasizing the limitations of pain management. She described this patient as her “most challenging patient”, indicating possible frustration from repeatedly explaining treatment limitations and a sense of helplessness. Unrealized expectations and unsatisfactory outcomes appeared to strain the doctor-patient relationship:

It’s just very, very difficult. And this often leads to conflicts with patients or therapists, or helplessness on the part of the therapist, for example, and frustration on the part of the patient. The patient feels misunderstood; the therapist says, ‘we’ve already tried this and that, now it has to improve,’ and looks forward to an improvement, but then the pain comes back. It doesn’t work. And at some point, you have less room to maneuver. (Interview 5, female, 46 years)

This GP described mutual frustration: patients feeling misunderstood and physicians feeling helpless. The therapeutic relationship often seemed to be at an impasse, lacking new stimuli for effectively managing chronic pain. Psychological factors frequently contributed to this tension, as illustrated in another case:

So, in essence, she lives with the pain and, partly, with the shame because it’s somewhat self-induced, you might say. And she skirts along the upper limit of her opioid needs. [...] There are more and more red flags that light up. You don’t want to leave her alone with the pain, but on the other hand, you also don’t want to perpetuate or sustain this behavior in other areas of her life. (Interview 5, female, 46 years)

This case highlighted the multifaceted nature of chronic pain management, where physical and psychological factors intertwined with the risks associated with opioid use. The GP described a dilemma: wanting to support the patient while being concerned about enabling harmful behaviors through opioid prescriptions.

In addition to concerns about patients’ medical outcomes and personal circumstances, one GP spoke about the emotional toll of treating these cases:

It’s simply difficult with chronic pain patients not to reach a point of countertransference where you start experiencing your own emotions. (Interview 4, male, 45 years)

Such emotional involvement might have led to GPs distancing themselves internally or withdrawing from the therapeutic process:

For me, it's always important to return to the idea of developing a shared treatment strategy. I can only make recommendations, but patients must take responsibility themselves. And if that doesn't work, I essentially withdraw from the treatment structure. (Interview 4, male, 45 years)

This withdrawal reflected the previously noted helplessness in managing these cases and might have exacerbated the tension in the doctor-patient relationship. Over time, such situations could have contributed to treatment stagnation.

Nevertheless, this scenario also suggested a potential solution: fostering collaboration through realistic goal setting. Physicians emphasized the importance of jointly established goals:

Freedom from pain would be ideal, but that's something we can't promise. It's about agreeing on realistic pain management goals together with the patient. (Interview 4, male, 45 years)

Effective collaboration required consistent relationship-building. For example, one GP scheduled regular follow-ups regardless of the patient's pain status to ensure open communication:

We schedule appointments regardless of whether the pain is better, worse, or the same. This way, they can express their concerns without feeling the need to justify their visit solely because of their pain. (Interview 2, female, 59 years)

Thorough patient histories were also identified as crucial to understanding the pathogenesis of chronic pain:

I revisit the history. When did the pain begin? Under what circumstances did it become what it is today?. (Interview 1, male, 70 years)

Empathy and communication skills were deemed critical for addressing the complexity of chronic pain management:

Willingness to engage in conversation, empathy, and the time you can and need to dedicate to such patients are crucial for improving their situation. (Interview 4, male, 45 years)

One GP emphasized the importance of an open and nonjudgmental approach:

I hear from patients that they feel judged—whether for being overweight or other perceived shortcomings. That's something I find completely inappropriate, as any sense of judgment negatively impacts the doctor-patient relationship. (Interview 5, female, 46 years)

The Role of Sex and Gender in Pain Therapy: It's All About the Nuances

After gaining an overview of the daily practice with patients suffering from CNCP receiving LTOT, we then explore the role of sex and gender in this context. The findings are divided into two sections: *Influence of patients' sex and gender on medical care* and *Influence of GPs' sex and gender on medical care*.

Influence of Patients' Sex and Gender on Medical Care

To begin with, we asked the interviewees whether they observed differences in how men and women perceive and present illnesses. Various perspectives were shared. One GP described women as “not complaining so often, rather more stoic compared to men” (Interview 1, male, 70 years).

Another GP described more in detail how he perceived differences between men and women in terms of pain tolerance:

Visceral pain is generally tolerated much better by women, as are tumor-related pains. In contrast, I have observed in practice that spinal pain, for instance, or bone pain, tends to be less well tolerated by women compared to men. On the whole, when women perceive pain more acutely, it is often expressed in a way that appears more suffering than in men. (Interview 3, male, 59 years)

This GP made indication-specific distinctions regarding pain tolerance based on his experience. His analysis remained grounded in a purely biological perspective on sex and gender, without considering social or psychological dynamics.

He associated women with a lower tolerance for intensely perceived pain compared to men, which at first glance appeared to contradict the earlier quote. This discrepancy could have stemmed from the different clinical cases or indications each GP had in mind during their subjective assessments. Alternatively, differences in patient populations in their respective practices might have played a role. Another possibility is that their subjective impressions were shaped by how these GPs interact with their patients.

When asked about the influence of these differences on his therapeutic decisions, the GP responded that these perceptions had minimal impact:

But other than that, as I said, it plays a relatively minor role in my therapy decisions. (Interview 3, male, 59 years)

In contrast to his observations about patients' emotions, he emphasized his rational approach here, potentially reflecting his self-image as a physician—and perhaps also as a man.

The clear categorization of male and female patients did not resonate with all interviewees. A female GP painted a more nuanced picture that incorporated psychological and social factors:

If I were to generalize about men and women regarding pain, I would say that women's pain is often more an expression of their psychological state. They may also be more receptive to addressing psychological components of their pain, whereas for men, it's more about something being 'broken' that needs fixing—a kind of car repair mentality, if you will. It's often even harder to explain psychosomatic connections or pain amplification models to them. (Interview 2, female, 59 years)

She identified clear differences between men and women in terms of their communication within clinical settings and their expectations concerning therapeutic approaches. When asked about the implications for care, she elaborated:

It may be more challenging to explain these things to men initially. But the same options are offered to them, including addressing psychological aspects. I wouldn't necessarily say they don't respond as well as women do; it's just that it's further from their frame of reference. (Interview 2, female, 59 years)

Following this perspective, it would be reasonable for GPs to adapt their communication and therapeutic offerings to accommodate these differences, potentially through varying consultation frequencies or tailored psychosocial interventions. Perceiving these differences requires sensitivity.

What this GP described contrasts with the previous GP (Interview 3) who, despite recognizing differences between men and women, did not base his therapeutic decisions on them. In the worst case, this could have lead to patients feeling inadequately understood:

I think pain patients have often talked to many people about their pain and sometimes experienced rejection [...] or felt like they were being told not to dwell on it or not to be 'hysterical.' Perhaps this is a stereotype that is more often applied to women. And sometimes patients even preemptively apologize for it, saying something like, 'I don't want to complain; I don't want to blow this out of proportion. (Interview 5, female, 46 years)

She described a certain apprehension among female patients about being judged by their GP, which suggested that these patients have previously experienced stigma within the healthcare system. This underscored the importance of a sensitive approach to patients with CNCP.

Influence of GPs' Sex and Gender on Medical Care

The findings from the previous section demonstrated that the GPs' gender and their internalized concepts of gender influenced their approaches to care. In the interviews, we explicitly asked the GPs how they perceive the impact of their own gender on their professional activities. Reflecting consciously on this influence was not an easy task for some participants:

This would mean that my communication as a man might be different depending on whether I'm speaking with women or men, particularly in relation to pain. (...) I mean, I can only reflect on this myself, so this is highly subjective. I'd claim that

I genuinely try to give every patient a fair chance and to treat them equally. But yes, I can also imagine that there are unconscious effects at play. (Interview 4, male, 45 years)

This response suggested that the GP might not have previously considered this question consciously. However, it also reflected his effort to ensure fairness and equality in patient treatment. Additionally, he did not dismiss the possibility of unconscious biases influencing his practice. Other GPs expressed the influence of gender more explicitly:

Yes, I absolutely believe so. [...] For example, I think that some women, particularly those from the older generation, come in with different expectations when they realize that it's a female doctor rather than a male one. Over time, I believe it makes some of them feel more comfortable, allowing them to open up or share things they might not otherwise disclose. (Interview 5, female, 46 years)

This female GP perceived that female patients felt safer and disclosed more about themselves when consulting with her than with male doctors. She attributed this directly to her gender and specific traits she associated with femininity. Elsewhere in the interview, she described herself as empathetic and curious, which she believed contributed to the comfort of her female patients. Conversely, this observation implied that some patients may feel inhibited when interacting with certain GPs, and the depth of a consultation depended on the GP's personality.

A male GP offered the following description of how his gender influenced his approach to patient care:

At least in terms of patient management, absolutely. I'm quite assertive, and as a result, I don't encounter much pushback in practice. It's not about being difficult with patients, but, as I said, about maintaining leadership in the therapy process. (Interview 3, male, 59 years)

Compared to the previously quoted female GP, this male GP's self-description revealed a significant contrast. He emphasized traits such as assertiveness and leadership, qualities typically associated with masculinity. This reflected his self-concept as a doctor, which is shaped by a focus on leadership. In contrast, the previous female GP appeared to adopt a more collaborative approach, emphasizing creating a space where patients feel comfortable sharing.

We also asked whether the interviewees had participated in any training on sex- and gender-sensitive medicine or sex- and gender-sensitive pharmacology. None of the participants reported having attended such training. Furthermore, these topics were not part of their medical education. However, all interviewees expressed an interest in receiving training on these subjects.

GPs' Needs and Wishes Regarding Sex- and Gender- Sensitive Pain Management: A Holistic Approach Is Key

To conclude, we provided GPs with an opportunity to express explicit wishes for gender-sensitive pain therapeutic interventions.

At the top of the list would be more time, which should also be adequately reimbursed. For me, that is the most essential aspect and the biggest issue here—that the necessary consultations are not adequately compensated. (Interview 4, male, 45 years)

This GP highlighted the need for more time with CNCP patients receiving LTOT compared to average patients, which inherently leads to cost pressures. Addressing this would create structural conditions to ease the care situation and give GPs the freedom to make changes in their care routines.

In addition to structural changes, the GPs also discussed specific content-related interventions, primarily focusing on professional exchange and access to information during consultations. One GP proposed case discussions, such as those conducted in quality circles, as a way to improve professional exchange (Interview 2, female, 59 years). Another suggested compiling a list of regional psychosocial support services, allowing referrals to complement the treatment concept (Interview 2, female, 59 years). All interviewed GPs expressed a need for further training in sex- and gender-sensitive pain therapy, general pain management, as well as sex- and gender-sensitive pharmacotherapy.

Regarding informational tools, several suggestions were made. Some centered on the objectification of pain:

If I could make one wish, it would be for a measurement tool that could provide us with truly accurate values for the pain being experienced. (Interview 5, female, 46 years)

This quote underscores the challenge of empathizing with patients' experiences and making objective decisions based on their accounts. Much like the desire for professional exchange, this reflects the wish for external decision-making aids. In this context, one GP recommended a tool provided by the German Pain Society (*Deutsche Schmerzgesellschaft e.V.* [DGS]), the German Pain Questionnaire:

What I find particularly helpful are the pain questionnaires from the DGS. These are available in written form, but we use an iPad-based system, where the data is electronically processed and integrated directly into our practice system. That has been exceedingly helpful. (Interview 3, male, 59 years)

Additionally, the inclusion of social criteria in therapy for patients with CNCP was suggested by one GP:

We could try to separate the subjective from the objective a little and identify whether the patient really needs more pain therapy or perhaps a different way of managing their pain, or more support from their social environment, or whatever else might be necessary. (Interview 5, female, 46 years)

This recommendation emphasized the importance of considering patients within their social contexts. It aligns with the previously mentioned need for better knowledge about available psychosocial resources in the local area. A structured assessment of psychosocial variables could serve as a diagnostic basis for interventions tailored to the patient's individual situation. The wishes expressed by the interviewed GPs suggest a preference for a holistic approach that integrates biological, psychological, and social determinants. These dimensions are already being addressed by GPs during consultations and are recognized as critical. However, targeted measures for gathering detailed pain histories and understanding patients' lived realities were considered valuable for enhancing current treatment routines. This, in turn, could improve patient outcomes and reduce the risk of frustrating experiences for both patients and GPs.

Discussion

In this study, we explored general practitioners' experiences and needs regarding sex- and gender-sensitive chronic pain management in the context of developing a new intervention to be tested in a subsequent trial. The results highlight the unique contribution of GPs in the field of pain therapy, especially the long-term relationship with the patient. Limitations or impasses regarding a variety of subjects were addressed (eg, unrealistic expectations, limited options, risk of addiction), which can cause frustration and lead to inner withdrawal for both the patient and the doctor.^{5,8} Some GPs reported, that they could not always avoid becoming involved in countertransference of emotions or pre-judgement of patients, even if they were aware that neutrality could suffer as a result. For patients, this meant that their current situation might not have been completely understood, potentially leading to suboptimal care. Addressing these issues required significant effort to build and maintain effective relationships. It was emphasized that a comprehensive medical history is crucial, that expectations and goals must be discussed, and that patients should be encouraged to collaborate. An empathetic attitude and a willingness to engage in dialogue are considered equally important to create a trusting foundation for the treatment of chronic pain. These aspects are in line with the recommendations in the German guidelines for the treatment of CNTC.^{32,33}

The impact of sex and gender on patient care is explicitly articulated. While some doctors emphasized impartiality, gender stereotypes continue to affect their work. This assertion can also be substantiated by empirical studies which show that gender dyads have a measurable influence on the course of medical consultations.^{14,15} Female doctors reported greater trust with female patients, while male doctors tended to focus on leadership. Experiences of stigmatization, particularly among female patients, influenced communication and trust. These findings align with previous research which states that male doctors, for instance, often associate the term "doctor-patient communication" primarily with medical history and place less emphasis on communication as a whole, while female doctors tend to prioritize aspects such as fostering an empathetic relationship.^{34,35}

The manner in which interviewees articulated their experiences also revealed notable gender-based differences. Female physicians tended to provide more detailed accounts of their emotional states and exhibited a higher degree of

openness regarding their internal conflicts. The statements from the interviewees revealed various stereotypes about men and women. Some distinctions are based purely on physical aspects (eg, pain perception), reflecting a biologically deterministic definition of sex. Social dimensions of gender also emerged, such as women's general openness to psychological aspects of their illnesses. The findings further indicate that the GPs' gender and their internalized concepts of gender significantly influence their interactions with patients and their relational work.¹³

The findings underscore the need for greater awareness and training in gender-sensitive medicine to address both explicit and implicit biases and to ensure equitable and effective patient care. None of the participants had undergone training in the field of gender-related medicine or gender-related pharmacology. Nevertheless, this was identified as a potential area for improvement by all participants. It is recommended by research studies that doctors receive targeted training, as well as further educational programs in the field of gender-sensitive pain therapy,^{9,36,37} for the purpose of preventing the marginalization of patients and fostering a better understanding of chronic pain experiences.³⁸ The provision of gender-sensitive medicine in medical studies is currently dependent on the location of the university in Germany. There is no nationwide curriculum. However, there has been an increase in the number of medical faculties that have established professorships, research or teaching programs in the field of gender-sensitive medicine in recent years.^{39,40}

GPs identify a number of approaches and actions that they find helpful in the care of patients with CNCP and LTOT, such as patient empowerment and active participation of the patients, assessment tools, professional exchange, psychosocial services, and further educational training. In the following we provide recommendations for a gender-sensitive pain management intervention in primary care, which are based on the needs and experiences of the GPs interviewed.

Based on the findings, the following recommendations to improve the care of patients with CNCP and LTOT were identified, emphasizing a sex- and gender-sensitive approach:

Increased Consultation Times

The treatment of patients with CNCP receiving LTOT requires significantly more time than average consultations. This additional time should be appropriately reimbursed to alleviate the economic pressure on GPs. Adequate remuneration is critical to fostering a treatment environment conducive to high-quality, individualized care.

Comprehensive Medical Histories

A comprehensive medical history should be taken, including an in-depth anamnesis and detailed information about the patient's pain history, with consideration of both biological and psychosocial factors. This holistic approach seeks to provide a deeper understanding of the patient's overall health, personal circumstances, and living conditions. It is important to recognize that the development of chronic pain is shaped not only by biological influences but also by psychological and social factors.³³

Enhanced Training and Education

All interviewed GPs identified a need for targeted professional development. Recommended areas of focus include:

- General pain management strategies
- Gender-sensitive pain management
- Gender-sensitive pharmacotherapy

Integrating these topics into medical education and offering ongoing professional training opportunities are essential steps to equip GPs with the necessary skills.³⁷

Structured Case discussions and Professional Exchange

Implementing regular case discussions, such as in quality circles, can facilitate peer exchange and improve decision-making processes in challenging cases. This collaborative approach fosters shared learning and reduces professional isolation.

Access to Psychosocial Support Services

GPs highlighted the importance of having access to regional directories of psychosocial support services. These directories should include resources for psychological therapy, social services, and other multidisciplinary approaches to support comprehensive care for CNCP patients.^{32,33,41,42}

Assessment Tools

Several GPs emphasized the importance of improving tools to assess and objectify pain, as well as the patients' social circumstances. Enhanced diagnostic instruments could support clinical decision-making and help validate patients' experiences in a way that fosters mutual trust and understanding.

Fostering Patient Collaboration

Successful pain management requires patients to be active participants in their treatment. It is necessary to set realistic goals collaboratively, emphasizing self-management and shared responsibility in achieving therapeutic outcomes.³³

Promotion of Empathy and Communication Skills

A key element in improving treatment outcomes is fostering empathetic and open communication. Patients often report feeling judged or dismissed due to stereotypes or stigmas. Training for GPs should include strategies to mitigate unconscious biases and create a neutral, supportive therapeutic environment.

Incorporation of a Biopsychosocial Model

Interventions should holistically address the biological, psychological, and social aspects of chronic pain. This comprehensive model acknowledges the multifaceted nature of CNCP and ensures that treatment strategies are tailored to individual patient needs.^{33,41}

Implementation of Sex- and Gender-Sensitive Approaches

Given the observed differences in how men and women experience and communicate pain, interventions should incorporate strategies that account for these variations. This includes adapting communication styles, treatment recommendations, and therapeutic goals to align with the individual patient's needs and preferences.

Implementing these recommendations may encounter barriers including healthcare system constraints on consultation time and resources, as well as potential resistance from providers regarding the necessity or feasibility of specific gender-sensitive training. These points will be evaluated by the subsequent feasibility study, to which the present qualitative study contributes.

Strengths and Limitations

Given the need to incorporate the interview data into the GESCO intervention development process, the timeframe for conducting the interviews was constrained. It is acknowledged that further interviews may yield insights that could further substantiate the responses to some of the sub-questions included in the interview guide. The sample size was limited to only five participants, which restricts the generalizability of the findings and may not fully represent diverse experiences. It is noteworthy, that the minimum professional experience was 18 years, ie the perspective of younger doctors, who may already be more familiar with sex- and gender-specific medicine, was not captured.

The surveyed GPs were between 45 and 70 years old, which aligns with the current demographic structure of general practice in Germany. General practice in Germany is currently facing significant challenges in attracting new professionals. Demographic change is one of the biggest challenges in this regard: while only 9% of general practitioners were over the age of 65 in 2012, this figure had already risen to 20% by 2022. This shift may lead to a gap that threatens the continuity of patient care.^{43,44} Another reason is the lack of new recruits. Despite existing support programs, general practice remains unattractive to many medical students, primarily due to the heavy workload and financial uncertainties associated with the field.⁴⁵ This suggests that effective measures must be taken to recruit and retain young professionals.

Furthermore, as interviews relied on self-report regarding the sensitive topic of gender bias, responses may be influenced by social desirability, potentially leading GPs to underreport biases or present idealized views of their practice.⁴⁶ To counteract this, the data was collected anonymously and by telephone in order to achieve physical distance. All interviews were conducted by a trained member of staff.⁴⁷

This study's main strength is its exploratory character: The findings of the present study should be regarded as an exploration of the circumstances faced by GPs in the treatment of patients with CNCP. In light of the overarching GESCO project, the results will be integrated into the participatory intervention development phase. In this context, the findings will be complemented by the results of interviews with patients with CNCP receiving LTOT, a review of the relevant literature and input from expert workshops, before being presented for discussion with key stakeholders. While other research examines gender-specific factors in primary care, often focusing on outcomes such as prescribing quality,⁴⁸ patient experience^{11,12,16,49} or do not specifically address chronic pain management,⁵⁰ our study addresses a specific gap. We provide empirical data from German GPs on their perceptions of sex and gender potentially influencing chronic pain management. Further research should go beyond regional specification and investigate GPs' subjective experiences and decision-making processes in relation to gender bias in chronic pain on an international level.

Conclusion

This study highlights the crucial role of GPs in managing CNCP patients on LTOT and the importance of a sex- and gender-sensitive approach. It reveals the complexity of pain management, influenced by long-term patient relationships, limited treatment options, unrealistic expectations, and addiction risks. Gender significantly affects care, impacting communication, trust, and treatment dynamics, with stereotypes and stigmatization especially affecting female patients.

Despite its relevance, none of the GPs received formal training in gender-sensitive care, highlighting a need for targeted educational programs. Practical recommendations include extended consultation time, structured case discussions, improved assessment tools, and better access to psychosocial support. These findings align with the GESCO project's goals of integrating stakeholder input to create more effective, gender-sensitive interventions in primary care.

Abbreviations

CNCP, Chronic non-cancer pain; LTOT, Long-term opioid therapy; GESCO, Gender-sensitive care for chronic non-cancer pain patients receiving long-term opioid therapy; GP, General practitioner.

Data Sharing Statement

The transcripts are not available due to the potential risk of compromising the confidentiality of the participants. However, all other study materials are available from the corresponding author upon reasonable request.

Ethics Approval and Consent to Participate

The GESCO project is conducted in accordance with the Declaration of Helsinki. It obtained ethical approval from the Ethics Commission of Witten/Herdecke University (reference number: 138/2022, date of approval: 08/25/2022; amendment: 08/29/2023). All participants received written information and provided informed consent.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

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