



BMJ Open is committed to open peer review. As part of this commitment we make the peer review history of every article we publish publicly available.

When an article is published we post the peer reviewers' comments and the authors' responses online. We also post the versions of the paper that were used during peer review. These are the versions that the peer review comments apply to.

The versions of the paper that follow are the versions that were submitted during the peer review process. They are not the versions of record or the final published versions. They should not be cited or distributed as the published version of this manuscript.

BMJ Open is an open access journal and the full, final, typeset and author-corrected version of record of the manuscript is available on our site with no access controls, subscription charges or pay-per-view fees (<http://bmjopen.bmj.com>).

If you have any questions on BMJ Open's open peer review process please email info.bmjopen@bmj.com

BMJ Open

General practitioners' attitude towards opioids for non-cancer pain: a qualitative systematic review

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-054945
Article Type:	Original research
Date Submitted by the Author:	15-Jul-2021
Complete List of Authors:	Punwasi, Rani; Erasmus Medical Center, Department of General Practice de Kleijn, L.; Erasmus Medical Center, Department of General Practice Rijkels-Otters, J.B.M.; Erasmus Medical Center, Department of General Practice Veen, M.; Erasmus Medical Center, Department of General Practice Chiarotto, Alessandro; Erasmus Medical Center, Department of General Practice; Vrije Universiteit Amsterdam, Department of Health Sciences Koes, Bart; Erasmus Medical Center, General Practice
Keywords:	PRIMARY CARE, PAIN MANAGEMENT, PUBLIC HEALTH

SCHOLARONE™
Manuscripts



I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our [licence](#).

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which [Creative Commons](#) licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

Original Article

General practitioners' attitude towards opioids for non-cancer pain: a qualitative systematic review

R.V.G. Punwasi, MD¹; L. de Kleijn, Msc, MD¹; J.B.M. Rijkels-Otters, Msc, general practitioner, PhD¹; M. Veen, PhD¹; A. Chiarotto, PT, MSc, PhD¹; Prof. B.W. Koes PhD^{1,2}

1. Department of General Practice, Erasmus University Medical Center, Rotterdam, The Netherlands.
2. Center for Muscle and Joint Health, University of Southern Denmark, Odense, Denmark

Total word count main text: 3907

Main paper: Box: 1 Figures: 1; Tables: 3; Supplemental material: 1 file; 2 Tables

Corresponding Author: Rani Punwasi, r.punwasi@erasmusmc.nl

ABSTRACT

Objectives

The opioid crisis has gained a strong foothold in high-income countries. In most of these countries, opioids are initiated by general practitioners (GPs). Identifying factors influencing GP’s opioid prescription decision making may help encounter this crisis more adequately. This systematic review aims to obtain insight on GPs’ attitude towards opioid prescription and to identify possible solutions that could promote changes in the field of primary care.

Design and setting

Systematic review of qualitative studies reporting GPs’ attitude towards opioids in non-cancer pain management.

Methods

Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsychInfo, CINAHL and Google Scholar were searched up to the 23th of July 2020. Studies were selected by two independent reviewers based on prespecified eligibility criteria. Studies’ quality was evaluated with the Critical Appraisal Skills Programme checklist, and their results were analyzed using thematic analysis. Quality of evidence was rated using the GRADE-CERQual approach.

Results

Thirteen studies were included. Thematic analyses emerged four themes: 1) GPs caught in the middle of the opioid crisis (GP’s dual role as healers and gatekeepers), 2) Are opioids always bad?, 3) GPs weighing scale (taking patient- and therapeutic relationship-related factors into account) and 4) GP’s sense of powerlessness (lack of alternatives, support by specialists, and lack of time in justifying non-prescriptions).

Conclusion

GP’s attitude towards opioid prescribing for non-cancer pain is subject to several GP-, patient- and therapeutic relationship-related factors. Raising awareness on the rational of opioid prescribing among GPs and patients and providing alternatives, other than opioids, to treat chronic pain might help fight the opioid crisis. More research is needed to develop

practical guidelines on appropriate opioid prescribing, tapering off opioid use and effective communication strategies.

(277 words)

Keywords: general practitioners, attitude, opioids, opioid crisis, pain management

Strength and limitations of this study

- This is the first review on this topic which is conducted by members working in the primary care setting
- We performed an analysis of the quality of the studies, as well as their relative contributions to the findings.
- Study screening and data extraction was conducted independently by two authors, with a third author mediating any disagreements.
- Most studies were performed in the USA making generalizability across countries limited.
- We only considered publications in English and Dutch eligible for inclusion.

PROSPERO registration number CRD42020194561. Protocol also included as supplementary file.

A funding statement

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Introduction

Worldwide a disturbing trend in doctor-prescribed opioid use is visible. (1-3) Opioids are commonly incorporated in the management of moderate to severe non-cancer pain, in particular by general practitioners (GPs). (2,4,5) The past two decades the number of opioid prescriptions by GPs increased extensively. (6,7) In the Netherlands, for example, GPs are responsible for approximately 75% of the first opioid prescription and 90% of the refill

prescriptions. (8,9)

Opioids show some analgesic efficacy for acute and palliative pain, but lack evidence for long-term pain relief. (10, 11) Opioids are associated with side-effects like obstipation, dizziness, falling and delirium. Additionally, their addictive nature has led to the worrisome worldwide opioid crisis. (12) Worldwide hospital admissions related to opioid use increased in past years. (13) The opioid crisis in USA is not comparable to the crisis seen in Europe. Yet in Europe, too, the opioid crisis is alarming with increasing opioid prescription rates, opioid related hospitalizations and deaths. (14-16) It is of utmost importance to turn the tide worldwide. An Opioid Expert Working Group has been installed in the UK to fight the opioid crisis. This group issued a warning on opioid medicines to inform patients about the risk of addiction. (17) In the Netherlands, GPs' guidelines have been altered and recommend the preservation of strong opioids to bridge disturbance in daily functioning due to severe pain and to taper off as soon as possible. (18) Recent numbers provided by the foundation for pharmaceutical statistics, an institute collecting prescription rates in the Netherlands, already demonstrated a decrease of opioid prescriptions after years of growth. (19) Despite these modest positive signs, the absolute numbers of opioid prescriptions in the Netherlands are still alarming.

Several systematic reviews elucidated multiple internal and external factors influencing GP's opioid prescription. (20,21) However, conclusions were based on studies published before 2019 and the authors of these reviews lacked clinical experience in the primary care setting. Since our review team mainly consists of primary caregivers, we believe our review will generate a deeper level of understanding which may initiate practical changes in our everyday work that can address this crisis. Therefore, the aim of this study is to gain insight into barriers and facilitators influencing GPs' opioid prescribing and to identify considerations that can improve current guidelines in order to promote opioid reduction in primary care.

METHODS

Protocol registration

The reporting of this study follows the Enhancing Transparency of Reporting the Synthesis of Qualitative research (ENTREQ) framework. (22) The ENTREQ framework is a validated method which offers guidance for researchers and reviewers to improve the reporting of

synthesis of qualitative research. The protocol for this systematic review is registered on PROSPERO (ID CRD42020194561).

Search strategy and study screening

The electronic databases Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsychInfo, CINAHL and Google Scholar were searched for articles reporting GPs' attitude on opioids prescription for non-cancer pain. Databases were searched from their inception date up to the 23th of July 2020 for articles written in English or Dutch. The search terms are presented in Supplementary Table S1. All articles yielded were exported into Endnote X7, (23) and duplicates were removed. Full-text articles describing GPs' attitude or perspective towards opioids prescription for non-cancer pain were included. Only data that could be attributed to GPs were extracted. Studies other than qualitative studies were excluded. Titles and abstracts were reviewed independently by two reviewers (RP and LK). Inclusion was judged on the basis of the full text. Full texts were assessed for inclusion by the same reviewers. Finally, RP and LK compared, discussed, and reconciled their included articles with a third reviewer (AC).

Data extraction and analyses

Two reviewers (RP and LK) independently extracted the following data: author/year, title, study location, study population, research aim and/or question, data collection and analysis method, key themes and author conclusions. A thematic approach as described by Thomas et al, (24) was used to synthesize findings from the primary studies. Firstly, two independent reviewers (RP and LK) extracted line by line text (including participants' quotations and findings of the original authors) and subsequently coded the text within an Excel sheet. Secondly, descriptive themes were developed by two reviewers (RP and LK) independently by looking for similarities and differences between the codes. These descriptive themes were discussed and refined into one thematic code book. Thirdly, a third reviewer (JR) re-examined this thematic code book. Disagreement was discussed until consensus was reached and the coding structure was adapted if necessary.

Quality assessment

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

To assess the methodological quality of each included study, two reviewers (RP, LK), independently applied the Critical Appraisal Skills Programme (CASP) checklist for qualitative research, which consisted of 10 questions to assess the method, credibility and the relevance of the study. (25) Discrepancies between reviewers were debated with a third reviewer (MV) until consensus was reached. To assess the confidence of the review findings the Cochrane approved GRADE-CERQual (Grading of Recommendations Assessment, Development, and Evaluation – Confidence in the Evidence from Reviews of Qualitative research) approach was used which scores confidence into categories: with good and minor/moderate/major concerns. (26) The GRADE-CERQual concerns four domains: (1) ‘Methodological limitations’ concern the conduct of the primary study; (2) ‘Relevance’ is the extent to which the primary studies are applicable to the review; (3) ‘Adequacy of data’ is an ‘overall determination of the degree of richness and quantity of data supporting a review finding’; (4) ‘Coherence’ considers how well the findings are grounded in the primary studies. (27)

Patient and Public Involvement
No patient involved

RESULTS

Included articles

The process of study identification and selection is summarized in Figure 1. Database searches resulted in 4,056 unduplicated, potentially relevant articles. After review of abstracts and titles, we selected 24 articles for full-text dual review. In total, 13 studies were included. (28-40) Study details of these included studies are summarized in Table 1. The sample size varied largely, ranging from 5 to 27 GPs. Four studies included solely GPs (31,32,35,37), whereas the other studies also interviewed other primary caregivers. Eight studies were performed in North-America, one study in Australia, (37) and the remaining four in Europe. (33,35, 38,39)

Methodological quality assessment

The critical appraisal of each included study is presented in Table 2. One study (29) was appraised as moderate valuable, since no clarification was given on how the study population

was selected. The findings of the GRADE-CERQual assessments are summarized in Table 3. The overall assessment of all but one (sub)theme was rated as high or moderate confidence.

Thematic analysis

Four main themes were constructed which were subdivided in several subthemes. (see Supplementary table S2) The four main themes are: 1) GPs caught in the middle of the opioid crisis, 2) Are opioids always bad? 3) GPs weighting scale 4) GP's sense of powerlessness. These themes are narratively explained based on data from the included articles and accompanied with quotations from their original studies. Selected quotations for each theme are provided in Box 1.

Box 1

Subthemes	Quotations
GPs caught in the middle of the opioid crisis	<p><i>GP's duty to treat pain</i></p> <p>“As a primary care physician, you're being told to treat pain and to acknowledge patients' pain and to do something about it. And so, it's very difficult to walk that line. And all of those guidelines start with medications that are largely ineffective, for most people's pain.” (32)</p> <p>““I came out of school in [the 1990s]. At that point, we were undertreating chronic pain, so we were told. So we were quite gung-ho about not undertreating pain, and using opioids because they were supposedly safer than anti-inflammatories. And now, the pendulum has swung . . . there's new evidence that it might actually not be doing them any good.” (31)</p> <p>‘You know this is helpful for you. This lets you get up and do your normal day, have your normal quality of life and without it you don't have [quality of life]. Do I have an alternative that works as</p>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

	well as this? Well, not really.” (37)
	“I feel like there should be some help for us in educating the public about keeping their use of opioids at the lowest possible level, it’s your safety. That they shouldn’t expect their pain to be zero because for chronic pain, it’s probably not going to be possible to reach zero. If they can go from an 8 to a 5, that’s already pretty amazing. I feel like there should be a bit more public awareness and education.” (31)
<i>GP’s duty towards society at large</i>	“I think it’s a very difficult balance, because there’s certainly a lot of harm done by opioid prescribing by physicians. Physicians are at least responsible for controlling the supply of prescription opioids.” (32)
	“I think every doctor wants to do the right thing. I think 99.9%, unless they’re selling prescriptions or whatever. I think most doctors need more to do the right thing, because we didn’t go into this profession to create drug addicts.” (32)
Are opioids always bad?	
<i>Effectiveness and side-effects</i>	“I feel like a change is not indicated at this time because she needs the medication in order to do her job and go to work and help her family, and it is working for her. She is overall low-risk for abuse. I don’t feel compelled to make a change for her.” (40)
	“Because some of us really like tramadol ... Others of us don’t particularly like it at all. And it seems to cause more side effects than codeine and stuff like that and people seem to feel sicker on it, and dizzy on it, and all sorts of stuff ... but it’s fitting the drug to the patient.” (35)
<i>Addiction</i>	““I think there’s a lot of unreasonable fears, the biggest one being addiction and I think it’s a grossly, grossly overstated concern, addiction. In my practice I’ve yet to see the patient who was put on opiates for benign pain who is addicted. ” (39)
	“There’s always the feeling that it’s going to be more difficult for somebody to stop taking opioids or needing to take more, but it would depend on the personality” (39)
	“I’m always more concerned about people who have an abusive or abusing personality, or been abusive of other

	drugs in the past, particularly concurrent abuse of alcohol or other drugs. "(39)
<i>Prescription depending on the nature of pain</i>	<p>"I have a bread and butter family medicine practice, cradle to grave. I probably prescribe about two patients a week for acute pain, a limited prescription, and then I probably have about 30 to 35 patients who are on chronic opioids. Acute, it's not really a concern. I know my patients, I have a steady practice. So if I have a time limited prescription for a purpose that a person's pulled their back post-surgery, dental, you know, they'll get 10 to 20 and then never again, I'm not concerned about that." (32)</p> <p>"I, personally, other than cancer patients or palliative care patients, have never started anyone on chronic opioids and I never would. I see no role for it in my practice." (32)</p>
<i>GPs weighing scale</i>	
<i>GP-related factors</i>	<p>" You just pick it up over the years, so I'm sure I've been moulded by the successes and the failures which have come my way in 27 years of general practice, yeah sure we all learn on the hoof, don't we?" (39)</p> <p>"I'm not as slow to treat with opiates now as I was 30 years ago, and I'm sufficiently bigheaded that even if another doctor with the title consultant thought it was inappropriate I'd still go ahead and do it. If there was no other way of controlling someone's pain, and having discussed it with the patient, I'm prepared to do it.' (39)</p> <p>'One of the reasons why I fear these medications so much or I hate them is because I don't like being in the situation where I have to now say something to this person. I fear how are they going to react? Are they going to get angry at me? Are they going to leave my care?' (37)</p> <p>"Um I suppose it's ... a bit of a vicious circle, it's lack of experience of getting people off the opioids ... The kind of fear that you're going to have someone hooked on it, which um I think is probably unfounded." (35)</p> <p>But I don't really see much difference in the way that I'd use opioids [in chronic joint pain] to the way I'd use them in palliative care, I mean the principles are exactly the same of getting</p>

	the dose right and ... titrating the dose with a liquid. (35)
Patient-related factors	“ I think if someone’s history shows that they have an addictive personality, whether it be street drugs, alcohol, smoking pot, whatever that theoretical concern is, but the patients I’ve used opiates for in noncancer are nearly always the elderly with joint pain and I don’t have any concerns about them.” (39)
GP-patient relationship factors	““I think the ones who trust me, knowing that I’m trying to help, won’t leave angry.” (32) “... and that is exactly what they’re doing. And sometimes they succeed. And then I feel bad because of it. I think, now I’ve sort of failed as a doctor.” (33)
GP’s sense of powerlessness	
Dumped on the GP	“It doesn’t seem reasonable or right or medical. You can’t really support this prescription that someone else has issued. You can’t really take over this and stand for your own conviction” (33) “These are prescription medications- they’re coming from somewhere. It’s us who are prescribing it, so we need to try and stop that. It might not be the GPs who are doing it, but we are by far the most accessible. We can try and address this issue. I see it as our duty to try and get them off these things- that us a collective of doctors have actually hooked them onto [opioids]’ (37) “She is seeing a psychiatrist, a pain specialist, an orthopedist, and a rheumatologist. She’s got all of these people involved in her care but, for some reason, I’m the person who stuck with her pain med management and nobody is super-eager to touch that.” (40)
Lack of alternatives	“I think the challenge, for me, is when you talk about decreasing, or trying to, patients kind of look at you and say ‘But I still have pain. What do I do?’ And often, there are not many other options. I don’t have anywhere else [to send them] . . . [so I] say yeah, I will do this for you. Sometimes you just don’t have it. And I think, for me, that’s the emotional part. . . . You’re caught between the college and trying to help this person, and the medical evidence and the lack of resources out there for people that should be there.” (31)

	<p>“I find it’s just challenging because I don’t know what else to offer. It’s more that you feel bad for these people because they are in pain and even though these medications aren’t good for pain really, I don’t know what else to do for them.” (31)</p>
	<p>“Where’s the support? Yeah, but where’s the multidisciplinary approach? There aren’t any community resources out there to help us.” (32)</p>
<p><i>Lack of knowledge and evidence /education</i></p>	<p>“There isn’t any patient support material. I just have the guidelines and I’m supposed to relay the information to them. And I’m relaying the information to a client that’s very resistant to change. I have to be like a pharmaceutical rep. I have to detail the patient. I have to get them to buy into the risk of the high doses. I don’t have any support material for that. I don’t have any evidence or graphs or charts to present to the patient to say, ‘Hey, if you’re on a Benzo and a narcotic, you’re at a higher risk of dying.’” (32)</p>
<p><i>Lack of legislation and appropriate protocols and contracts</i></p>	<p>“These are the rules. You know the rules. They’re not my rules. Uh, this is the law and we can both agree that, you know, and those situations really practice in a way that’s against the law. Hum, and so this makes it, it makes it more clear and objective and greatly reduces that kind of degree of emotional energy that was stressful prior to that. (28)</p>
<p><i>Lack of time</i></p>	<p>“The biggest problem in the whole thing is lack of time. Typically these are complex people with multiple problems, and you really could spend the whole appointment, more than 1 whole appointment, just talking about this [opioid agreement]. I mean, we have all these reminders that we have to do, and all the scripts, and they’re wanting a podiatry consult, and an eye consult, and you need to really sit down and go through a person’s record, and really try to make a more rational decision. I take it very seriously. It’s serious business. What if you do create an opiate problem for somebody?..because you’re not being careful enough about it? (36)</p>

GPs caught in the middle of the opioid crisis

GPs’ duty to treat pain

As healers, GPs desire to relief patient’s pain appropriately. (31,32) The subjective nature of pain complicates this mandate. (31,33) GPs interviewed by Desveaux et al, stated that before the opioid crisis it was believed that chronic pain was often undertreated. (31,32). Some GPs claimed analgesics other than opioids are seldom sufficient for chronic pain. (31,33) Some GPs considered the patient as an undoubtable expert of their pain and considered it as their job to address and eliminate pain. (31,32) And as stated by the GPs from Desveaux et al, (31) patients expect chronic pain to reach to zero. A range of emotional and psychosocial components contribute in maintaining chronic pain, making these expectations unrealistic. (32) These GPs pledge for more public awareness and education among patients regarding their pain. (31)

GP’s duty towards society at large

Because of the well-known addictive character of opioids, there is a stigma in prescribing opioids these days. (34,35) While some felt that the negative attention was unfair, others acknowledged the role that physicians have played in contributing to the opioid crisis. (32) GPs emphasized and acknowledged their gatekeeper role in fighting the opioid crisis. (28-40) However, the earlier mentioned subjective nature of pain, made some GPs doubt their medical decisions and at times created feelings of guilt of undertreating their patients. (31, 33, 34) GPs reported to feel thorn between the desire to effectively treat patient’s pain and the necessity from a societal point of view to decrease opioid prescriptions in order to alter the opioid crisis.

Are opioids always bad?

Effectiveness and side-effects

Several GPs stated that prescribing pain medication is a vigilantly balance between effective pain relief and possible side-effects. (29,30). In this matter, individualized prescribing is essential especially in elderly and patients with comorbidities. (31, 35) When restoring functional capacity and improving the quality of life, according to the GPs interviewed by Tong et al, the benefits of opioids at times outweighed the risks in chronic pain management. (40) Several GPs’ prescribing decisions were affected by the risk that opioids might cause

such as falls, drowsiness, constipation or nausea. (35,37,38) A small subset of self-described “militant” GPs avoided opioid prescription in non-cancer patients citing limited indications and benefits. (31,32) GPs interviewed by Esquibel et al. agreed with this statement and claimed that opioids lack evidence for long-term effectiveness and can only cause unwanted side effects in the end. (34) However, some GPs considered weak or short acting opioids as an acceptable treatment for chronic non-cancer pain. (33) According to the interviewed GPs, the efficacy of weak or short acting opioids differed largely. Some felt more comfortable prescribing short-acting instead of long-acting opioids because this gave them a sense of control. (32) Whilst others believed short-acting opioids increased the likelihood of breakthrough pain. (32) The same accounts for GP’s preferences in type of weak opioids they often used. (33,35)

Addiction

Common knowledge on the addictive nature of opioids has made physicians reluctant in prescribing them. (39) However, some GPs described addiction and misuse as a concern that should be dealt with, but should at the same time not lead to a barrier for prescribing opioids. (35, 39) GPs interviewed by Seamark et al, take tolerance and the possibility that the patient may require more medication over the years into account when prescribing opioids. (39) Some GPs believed long-acting opioids to have a higher likelihood for addictive potential and escalating doses. (32) Many GPs also feared addiction in patients with a history of substance misuse or patients with an abusive personality. (32, 39)

Prescription depending on the nature of pain

As mentioned earlier, some GPs considered opioids justified in chronic pain, while other GPs considered it solely for terminal or palliative care. (31,32,39,40) For psychosomatic illnesses GPs interviewed by Ekelin et al expressed to be reluctant in the prescription of opioids. (33) For osteoarthritis opioid treatment was seen as overtreatment by several GPs. (38)

GPs weighing scale

GP-related factors

GPs’ experience plays a pivotal role in opioid prescription decision-making. Some GPs stated that due to their longstanding practices and their inherently strong therapeutic relationships made them feel more confident in prescribing opioids. (32) Previous experiences with opioid prescriptions and opioid-specific training were also mentioned as facilitators in confidently prescribing opioids. (35,37,39) GPs also reported to feel more confident in prescribing opioids when they had worked in addiction centers or treated patients in a palliative care setting. (32) Two studies showed that older and more experienced male doctors feel pretty confident in repeating weak opioid prescriptions. (33,35) GPs who lacked experience in tapering off opioids, stated to feel less confident in opioid prescriptions. (35) Some GPs feared by refusing or tapering off opioid prescriptions would push patients into illicit drug use. (33,35) Some GPs with previous conflicts with patients regarding opioids avoided these analgesics “as a mechanism to avoid challenging conversations” (32). Moreover, prevailing standards on opioids and prescription behavior among coworkers influenced GPs’ prescription behavior (32,35).

Patient-related factors

GPs declared patient’s age as an important factor in the decision making on opioid treatment. (39) In elderly, negative side-effects were considered more problematic than the addictive nature of opioids. This in contrast to younger ones in whom the addictive nature was the main reason to not prescribe opioids. (39) In young adults opioids were often considered a last resort. Improving social relationships and housing conditions were considered more important aspects than prescribing stronger medications. (37) GPs interviewed by Seamark et al were reluctant to prescribe opioids in patients with a history of misuse or psychiatric illness. (39) Some GPs expressed to be more confident in prescribing opioids for patients who were reluctant in receiving opioid treatment as opposed to patients who were demanding for opioids. In the latter addiction was feared. (32)

GP-patient relationship factors

Several GPs stated “knowing the patient” facilitates decision-making in prescribing opioids. (32) GPs declared that long-standing therapeutic relationships made it easier to decide whether or not to start opioids as well as to decide whether to renew a prescription. GPs relied on patient’s pain presentation for opioid prescription; however, in case of opioid prescriptions patients might not always be the most trustworthy partner (33) Some GPs described using a

gut feeling in deciding to prescribe opioids. (36) The potential loss of a doctor–patient relationship was a major concern for GPs when declining to prescribe opioids. (32) GPs worried that they would be perceived as not empathetic if they refused to prescribe opioids. Nonetheless, they acknowledge that it is their responsibility to take dependence and addiction into account. Many GPs consider talking about opioid treatment with patients to be a major source of conflict (32,37) Some GPs even felt manipulated by their patients when discussing pain treatment. (32) According to GPs, the subjective nature of pain further enhanced this feeling of mistrust between the GP and its patients. (32)

GP's sense of powerlessness

Dumped on the GP

GPs reported that specialists handle a more liberated approach in opioid prescription and don't do their due diligence in addressing the opioid crisis. (32) They report feeling that the management of opioids is often “dumped on the GP”, as a clear handover is often missing. (32) GPs stated to feel mostly uncomfortable renewing opioids when they disagree on the indication or if they did not receive a clear handover on when and how to taper off. (30,37,40) Some GPs stand firm and refuse renewal as they find it their responsibility to get their patients off opioids. (37) Yet other GPs stated to be more liberal in their renewals to avoid difficult conversations with their patients (33)

Lack of alternatives

GPs claimed to have a lack of alternatives when managing chronic pain. Non-pharmacological options like regular physical activity, psychotherapy and physiotherapy are often rejected by patients. (37) Long waiting lists of public pain specialists and unaffordability of private specialists result in negative perceptions by GPs. (37) Moreover, some GPs stated that most referrals end in opioid prescriptions. GPs interviewed by Desveaux et al (32), want a more interdisciplinary approach for chronic pain management. In older patients alternatives for opioids are even scarcer according to the GPs. Impaired kidney function and contraindications makes other pharmacological options limited. (40)

Lack of knowledge and evidence /education

GPs considered conversations about opioids as difficult as these often give rise to a lot of tensions. (31) Some GPs missed patient support material to educate patient about opioid treatment. In the absence of specialized training (i.e., chronic pain management or addictions training) GPs feel less equipped to engage conversations on opioids and therefore adhere more closely to current recommendation in opioid guidelines. (32)

Lack of legislation and appropriate protocols and contracts

Some GPs expressed clear legislation as important and helpful. Rules they can seize to justify their therapy (28). While others reported feeling current opioid protocols were too limited for using in practice and often did not consider the lack of alternatives in primary care (32). Some GPs stated that adhering to opioid guidelines interferes with their duty as a “healer” (32). Negative experiences with protocols resulted in less adherence to protocols and guidelines (32). Some GPs stated that a lack in appropriate protocols in tapering dosage resulted in avoiding opioid prescription. (31) Several physicians expressed doubts on their use of recommended opioid management practices (eg, drug screening, frequent follow-up appointments, contracts) and claimed to not use the protocols as often as they should. (36)

Lack of time

When justifying a denial of opioid prescription to a patient, GPs reported to be frustrated by a perceived lack of time (39)

Discussion

Principal findings

Our review yielded four global themes on GPs’ attitude towards opioid pain management. GP’s attitude towards opioid prescribing for non-cancer pain is subject to several GP-, patient- and therapeutic relationship-related factors. The subjective nature of pain places GPs in a split position of being a healer but also a gatekeeper in the opioid crisis. The ongoing “zero tolerance” trend in experiencing pain has led to a more liberal approach in prescribing opioids among some GPs. Some GPs consider opioids justified for non-cancer pain management if functional capacity and quality of life improve. While other GPs find opioids to have limited indication and benefit in non-cancer patients. There were some apparent

1
2
3 differences among GPs individual characteristics such as age, experience, working place and
4 GP-patient relationship. GPs who lacked experience in tapering off opioids, felt less confident
5 in opioid prescriptions. Opioid prescription behavior among co-workers also influenced GP's
6 individual prescription behavior. Most GPs stated that "knowing the patient" facilitates
7 decision-making in prescribing opioids. The potential loss of a doctor-patient relationship
8 was a major concern for GPs when declining to prescribe opioids. GPs stated that current
9 guidelines are too general and not properly address the problems they face every day. Lack of
10 support by specialists and access of multidisciplinary pain centers represent a big frustration
11 for GPs.
12
13
14
15
16
17
18
19

20 Recent studies have demonstrated that opioids achieve negligible improvements in pain,
21 function and quality of life. (41-45) The very recent NICE guidelines for (primary and
22 secondary) chronic pain explicitly recommend conservative treatment options with no or very
23 little side effects (e.g. exercise) over pain medications as first-line option. (46) As
24 demonstrated by our findings and studies on this same topic, (20,21) the addictive nature of
25 opioids is widely recognized in primary care and is one of the factors that make GPs refrain
26 from prescribing opioids especially in younger patients and patients with psychiatric disease
27 or history in drug or alcohol abuse. This review underlines the importance of educating GPs
28 on effective strategies in chronic pain management. Yet, our findings also show that
29 broadening GPs knowledge alone is not sufficient. In addition to previous reviews on this
30 topic, our review highlights the importance of raising awareness among not only prescribers
31 but also patients that especially in chronic pain a pain reduction to zero is often impossible.
32 Patients have to realize that opioids are not always "the Holy Grail". Developing patient
33 support materials were suggested as tool to create awareness among patients.
34
35
36
37
38
39
40
41
42
43
44
45

46 Consistent with previous reviews (20,21), a majority of the studies were conducted in the
47 USA. In our study, four of the included studies were performed in Western Europe where
48 opioid prescription habits are comparable to those in the Netherlands. (47) Number of opioid
49 prescriptions and related problems differs largely between the USA and Western Europe. (48)
50 As findings of our review are based on studies performed in countries with different
51 healthcare systems, the needs and problems Dutch GPs face might differ. Our findings
52 underline the importance of developing improved guidelines to effectively treat chronic non
53 cancer pain, promote appropriate opioid prescribing and methods for tapering off opioid use.
54 These guidelines and interventions should be developed taking health care and geographical
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

contexts into consideration. And mores specifically these guidelines should address the problems that GPs face in their day to day work, such as limited time, limited possibilities for consultation and waiting lists at multidisciplinary centers for pain. Furthermore, there is a need for more collaboration with specialists that initiate opioids and with multidisciplinary pain centers to discuss treatment options for patients with chronic pain. As demonstrated by this review GPs often prescribe opioids to avoid conflicts with patients Hence, educating GPs on conversation techniques to engage difficult conversations with chronic pain patients is much needed. Manufacturing patient support materials to present to the patient and educating them about opioids might help

Strengths and limitations

A strength of our study is that GPs’ perspectives on opioid treatment for non-cancer pain were synthesized by a review team of mainly GPs using a transparent and robust methodology to generate new and comprehensive themes reflecting data across different geographical settings. One might argue that our direct involvement in primary care might cause a source of bias. Yet, qualitative research always contains an element of subjectivity and being involved in the field led to a deeper level of understanding which may spur practical changes in our everyday work that are desperately needed. This review has included seven studies (28,31-33,37,38,40) that have not been included in the two most recent reviews on this topic (20, 21). Four of these included studies (31,32,37,40) were published recently in 2019, making this review the most up to date qualitative review regarding this topic. Nine studies were excluded in this systematic review because these also included data on other primary care givers such as nurse practitioners or doctor’s assistants and the data regarding GPs could not be separated. By excluding these studies we are aware that we might have lost some potentially useful data. However, since the primary care givers authorized to prescribe opioids differ from country to country, it was decided that by restricting to data on GPs’ attitude, data retrieved on the attitude towards opioid prescription would be based on the actual prescribers of opioids. The review was limited to studies published in the Dutch and English language. Moreover 12 studies were not available in full text. Although most studies used unstructured or semi-structured interviews with GPs within a standard non-theory-based qualitative approach, two used focus groups discussions which might have led to moderator’s bias. Each study not equally contributed to the presented data. In *Rosemann et al.* (38) only one paragraph was dedicated to GP’s attitude towards opioid and in specific for joint pain. In Achkar et al, of the

five included participants only two were GPs making the data extraction minimal. Moreover, a majority of the studies were performed in the USA making generalizability limited.

Conclusion

This review describes how GPs' as "healers of pain" and "guardians of the community" deliberate the use of opioids in chronic pain. A zero-tolerance policy towards pain by both doctors and patients, a wish for strong doctor-patient relationships with a fear for difficult conversations, a lack of knowledge and protocols on effective strategies to treat chronic pain in primary care, a lack of time and missing collaboration with specialists complicate the decision to refrain from opioids in chronic pain. Future research to develop practical guidelines on appropriate opioid prescribing, tapering off opioid use and effective communication strategies are necessary to turn the tide on this opioid crisis.

Author's contribution

RP and LK made substantial contribution to the conception and/or design of the work. RP, LK, JR and AC contributed to the acquisition, analysis and interpretation of data for the work. RP, LK, JR, AC, MV and BK provided input to drafting the work and/ or revising it critically and gave final approval of the version to be published.

Figure 1. PRISMA Flowchart of article identification and selection

Ethics approval: ethical approval was not sought for the present study because this article is a systematic review

Literature

1. De Conno F, Ripamonti C, Brunelli C. Opioid purchases and expenditure in nine western European countries: 'are we killing off morphine? Palliative Med 2005; 19: 179–184.

2. Fischer B, Jones W,Rehm J. Trends and changes in prescription opioid analgesic dispensing in Canada 2005-2012: an update with a focus on recent interventions. *BMC Health Serv Res* 2014; 14: 90.
3. Parsells Kelly,J, Cook SF, Kaufman DW, et al. Prevalence and characteristics of opioid use in the US adult population. *Pain* 2008
4. The Royal Australian College of General Practitioners. Prescribing drugs of dependence in general practice, Part C1: Opioids, 2017. East MelbourneVictoria: RACGP.
5. Ashaye T., Hounscome N. , Carnes D., Taylor S.J.C.,Homer K., Eldridge S., Spencer A., Rahman A.,Foell J., Underwood M.R., Opioid prescribing for chronic musculoskeletal pain in UK primary care: results from a cohort analysis of the COPERS trial. *BMJ Open* 2018;8:e019491.
6. Katia M C Verhamme et al. Are we facing an opioid crisis in Europe?. *Lancet Public Health* . 2019 Oct;4(10):e483-e484
7. Weesie Y. Ook Nederlandse huisartsen schrijven vaker opioïden voor. *Huisarts Wet* 2018;61(10):10
8. van Brakel R, Van Rijn van Alkemade E. Verslag rondetafelconferentie VWS: gebruik opioïden. Utrecht: Instituut voor Verantwoord Medicijngebruik, 2018.
9. Nivel. https://www.nivel.nl/sites/default/files/bestanden/Rapport_voorschrijven_opioiden.pdf
10. Jensen MK et al. 10-year follow-up of chronic nonmalignant pain in patients: Opioid use, health related quality of life and health care utilization. *Eur J Pain* . 2006 Jul;10(5):423-33
11. Hannah-Rose Tucker et al. Harms and benefits of opioids for management of non-surgical acute and chronic low back pain: a systematic review. *Br J Sports Med*. 2020 Jun;54(11)
12. Benyaminet al. Opioid complications and side effects. *Pain Physician*. 2008 Mar;11(2 Suppl):S105-20.
13. Winfried Häuser et al. The opioid epidemic and national guidelines for opioid therapy for chronic noncancer pain: a perspective from different continents. *Pain Rep*. 2017 May 12;2(3)
14. SFK. https://www.sfk.nl/publicaties/PW/2020/copy_of_scores-kwaliteitsindicatoren-ook-grafi-sch-weergegeven, PMID: 26084418

15. European Monitoring Centre for Drugs and Drug Addiction European drug report 2018: trends and developments. Publications Office of the European Union, Luxembourg 2018
16. (Trends in opioid analgesic abuse and mortality in the United States. *N Engl J Med*. 2015;372:241–248
17. Pharmatimes.
http://www.pharmatimes.com/web_exclusives/is_the_uk_facing_its_own_opioid_crisis_1315310. Retrieved on 13th of April 2021.
18. NHG richtlijnen. <https://richtlijnen.nhg.org/standaarden/pijn#volledige-tekst>. Retrieved on 13th of April 2021
19. SFK. https://www.sfk.nl/publicaties/PW/2020/copy_of_scores-kwaliteitsindicatoren-ook-grafi-sch-weergegeven. Retrieved on 13th of April 2021
20. Kennedy et al. ‘If you can’t see a dilemma in this situation you should probably regard it as a warning’: a metasynthesis and theoretical modelling of general practitioners’ opioid prescription experiences in primary care. *British Journal of Pain* 2019, Vol 13(3) 159–176
21. Toye et al. Meta-ethnography to understand healthcare professionals’ experience of treating adults with chronic nonmalignant pain. *BMJ Open* 2017;7:e018411. doi:10.1136/bmjopen-2017-018411
22. Tong A, Flemming K, McInnes E, et al. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol*. 2012 Nov 27;12:181
23. Thomson Reuters. EndNote X7. 2014 Retrieved from <http://endnote.com/product-details/x7>.
24. Thomas J, Harden A. Methods for thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol* 2008;8:45-59.
25. CASP tool. <http://cfkr.dk/images/file/CASP%20instrumentet.pdf>
26. Lewin S, et al. Using qualitative evidence in decision making for health and social interventions: an approach to assess confidence in findings from qualitative evidence syntheses (GRADE-CERQual). *PLoS Med*. 2016;12(10): e1001895. doi:10.1371/journal.pmed.1001895)
27. Lewin S, et al. Using qualitative evidence in decision making for health and social interventions: an approach to assess confidence in findings from qualitative evidence

- syntheses (GRADE-CERQual). PLoS Med. 2016;12(10): e1001895. doi:10.1371/journal.pmed.1001895)
28. Achkar et al, 2017. Exploring perceptions and experiences of patients who have chronic pain as state prescription opioid policies change: A qualitative study in Indiana. BMJ Open. 2017 Nov 12;7(11):e015083.
29. Barry et al, 2010. Opioids, chronic pain, and addiction in primary care. J Pain. 2010 Dec;11(12):1442-50.
30. Bergman et al, 2013. Contrasting tensions between patients and pcps in chronic pain management: A qualitative study. Pain Med. 2013 Nov;14(11):1689-97.
31. Desveaux et al, 2019. Family Physician Perceptions of Their Role in Managing the Opioid Crisis. Ann Fam Med. 2019 Jul;17(4):345-351
32. Desveaux et al, 2019. Understanding the behavioural determinants of opioid prescribing among family physicians: a qualitative study. BMC Fam Pract. 2019 May 10;20(1):59
33. Ekelin et al, 2018. The dilemma of repeat weak opioid prescriptions - experiences from swedish GPs. Scand J Prim Health Care. 2018 Jun;36(2):180-188
34. Esquibel et al, 2014. Doctors and patients in pain: Conflict and collaboration in opioid prescription in primary care. Pain. 2014 Dec;155(12):2575-2582
35. Gooberman-Hill et al, 2011. Professional experience guides opioid prescribing for chronic joint pain in primary care. Fam Pract. 2011 Feb;28(1):102-9
36. Krebs et al, 2014. Barriers to guideline-concordant opioid management in primary care - A qualitative study. J Pain. 2014 Nov;15(11):1148-1155
37. Prathiva,di et al, 2019. Qualitative insights into the opioid prescribing practices of Australian GP. Fam Pract. 2020 Jul 23;37(3):412-417
38. Rosenmann et al, 2009. Problems and needs for improving primary care of osteoarthritis patients: The views of patients, general practitioners and practice nurses. BMC Musculoskelet Disord. 2006 Jun 2;7:48
39. Seamark et al, 2013. Professional experience guides opioid prescribing for chronic joint pain in primary care. Fam Pract. 2011 Feb;28(1):102-9
40. Tong et al, 2019. Chronic Opioid Prescribing in Primary Care: Factors and Perspectives. Ann Fam Med. 2019 May;17(3):200-206
41. Eriksen J, Sjøgren P, Bruera E, et al. . Critical issues on opioids in chronic non-cancer pain:. Pain 2006;125:172–9.

- 1
2
3 42. Ballantyne JC, Shin NS. Efficacy of Opioids for Chronic Pain. Clin J
4 Pain 2008;24:469–78.
5
6
7
8 43. Dunn KM, Saunders KW, Rutter CM, et al. . Opioid prescriptions for chronic pain and
9 overdose: a cohort study. Ann Intern Med 2010;152:85–92.
10
11
12
13 44. Noble M, Treadwell JR, Tregear SJ, et al. . Long-term opioid management for chronic
14 noncancer pain. Cochrane Database Syst Rev 2010;1:CD006605.
15
16 45. Rawal N. Management of acute and chronic pain. London: BMJ Books, 1998.
17
18 46. NICE guideline. Chronic pain (primary and secondary) in over 16s: assessment of all
19 chronic pain and management of chronic primary pain. Published: 07 April 2021
20
21 47. Kalkman et al. Trends in use and misuse of opioids in the Netherlands: a retrospective,
22 multi-source database study. Lancet Public Health. 2019 Oct;4(10)
23
24 48. Meyer et al. Prescription Opioid Prescribing in Western Europe and the United States. R I
25 Med J (2013). 2020 Mar 2;103(2):45-48.
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Table 1. Details of included articles

Study first author (date)	Focus and aims	Study population	Location	Data collection methods	Data analysis method	Key themes	Author conclusions
Achkar (2017)	exploring the impact of Indiana’s opioid prescription legislation on decision making and satisfaction with the prescriber–patient partnership	5 PCP’s	Indiana, USA	Semi-structured interviews	inductive	(1) living with chronic pain is disruptive in multiple dimensions; (2) established pain management practices were disrupted by the change in prescription rules; and (3) patient–provider relationships, which involve power dynamics and decision making, shifted in parallel to the rule change.	The Indiana law change disrupted established pain management practices and decision-making relationship between providers and their patients
Barry (2010)	examine physicians’ attitudes and experiences about treating chronic noncancer pain	23 PCP’s	New England, USA	face-to-face semistructured interview	Grounded theory	Physician factors, patient factors (ie, physicians’ perceptions of patient factors), and logistical factors as barriers and facilitators to treating patients with chronic pain	Perceived barriers (divided into physician, patient and logistics factors) to treating patients with chronic noncancer pain are common
Bergman (2013)	Develop a better understanding of the respective experiences, perceptions, and challenges both patients with chronic pain and PCPs face communicating with each other about pain management in the primary care setting.	14 PCP’s	Indiana, USA	one-time in-depth interviews	inductive	1) the role of discussing pain versus other primary care concerns, 2) acknowledgment of pain and the search for objective evidence, and 3) recognition of patient individuality and consideration of relationship history.	Competing demands of primary care practice, differing beliefs about pain, and uncertainties about the appropriate place of opioid therapy in chronic pain management contributed to tensions

Desveaux (2019)	Firstly, explore Canadian GP's' perspective on opioid prescribing and the management of CNCP. And secondly to explore differences in perspectives that may be potential drivers of practice variation	22 GPs	Ontario, Canada	semistructured interview	Framework analysis	1) Discrepancies Between GP Training and Current 2) Tension Between the FP's Role and Patient and System Expectations 3) Effect of Length of Time in Practice and Strength of Therapeutic Relationships on Perspectives on Opioid Prescribing Expectations	the majority of GPs exhibit a general apprehension and reluctance to prescribe opioids. Number of years in practice influence GP's response
Desveaux (2019)	to understand (1) the current perspectives of FPs as it relates to opioid prescribing, and (2) the perceived barriers and enablers to guideline-adherent opioid prescribing and management of CNCP	22 GPs	Ontario, Canada	semistructured interview	Framework analysis	1) Beliefs about consequences, Beliefs about capabilities, 3) Behavioural regulation, 4) Professional role and identity	FPs face a wide range of complex (and often interacting) challenges when prescribing opioid therapy to their patients in a climate of increased prescriber scrutiny.
Ekelin (2018)	Firstly, to explore how GPs experience requests for the renewal of prescriptions for weak opioids unrelated to a consultation. Secondly,	In total 21, consisting of GP's residents and interns	Sweden	Interview in focus groups	inductive	1) adverse feeling, 2) passive strategies, 3) active strategies	The renewal of weak opioid prescriptions without a consultation is experienced as an ethical dilemma for the GP and leads to various adverse emotions

	understand more about their strategies for handling insuch situations.						
Esquibel (2014)	examining the experiences of physicians adults giving opioid therapy for relief of CNCP	21 PCP's	USA	semistructured interview	iterative	1)Understanding the experience of pain 2)Use of pain medications Doctor-patient relationship 3)Communication 4)Perception of physician 5)Making meaning in life 6)Nonorganic factors affecting pain experience	chronic pain and the challenges of its treatment are pressing problems for patients and their physicians and for society at large, fueling initiatives and demands collaboration.
Gooberman-Hill (2011)	identifing GPs' views about prescribing strong opioids for chronic non-cancer pain with focus on chronic joint pain as the most common, disabling, and frequently encountered condition in primary care	27 GP's	Bristol, UK	Face-to-face interview	descriptive	1) Prescribes strong opioids for chronic joint pain 2) Are opioids the best option? 3) Managing adverse effects and assessing vulnerable patients 4) Views about addiction, withdrawal and misuse	When GPs prescribe opioids the risk of adverse effect, the needs of indivial patients, and previous experience of prescribing opioids are taken into account.
Krebs (2014)	better understanding of primary care physicians' and patients' perspectives on recommended opioid management practices and to identify potential	14 PCP's	Indiana, USA	open-ended interview guides	iterative	1) inadequate time and resources for opioid management; 2) relying on general impressions of risk for opioid misuse; and 3) viewing opioid monitoring as a "law enforcement" activity. We identified 1 major facilitator: the need to protect patients from opioid-related harm.	Barriers identified in this study—inadequate time and resources, relying on general impressions of risk, and viewing opioid monitoring as a law enforcement activity—likely contribute to underuse of recommended opioid management practices in primary care

	barriers and facilitators of guideline concordant opioid management in primary care						
Prathividi (2019)	To explore Australian GP opioid prescribing attitudes, beliefs and knowledge, and self-reported factors influencing prescribing decisions	20 GPs	Melbourne, Australia	in-depth semi-structured interviews	Framework analysis	1) improving quality of life 2) addiction and dependence, 3) autonomy and responsibility	Patient age and perceived age-related opioid harm were important factors influencing prescribing decisions.
Rosemann (2006)	giving insight into patients', physicians' and practice nurses' views on management of OA	20 GPs; 20 nurse	Germany	Face-to-face interview, a semi-structured interview guide with open-ended questions	Iterative process to identify codes from initial categories and derive new categories inductive	1) proceedings 2) problems 3) others	GPs should focus more on disability and pain and on giving information about treatment since these topics are often inadequately addressed
Seamark (2013)	describing the factors influencing GPs prescribing of strong opioid drugs for CNCP	17 GPs and 1 focus group	UK	semi-structured interviews and a single focus group		1) Chronic non-cancer pain is seen as different from cancer pain., 2) Difficulties in assessing pain, 3) Concerns around tolerance and addiction. 4) Effect of experience and events. 5) costs	GPs demonstrated a thoughtful attitude towards prescribing strong opioids for CNCP
Tong (2019)	identify patient- and clinician-specific factors associated with any opioid	16 PCP's	Virginia, USA	semi-structured interviews	inductive	1) Inheriting patients on chronic opioids, 2) Co-occurring health problems 3) Benefits of opioids for chronic pain	Although primary care clinicians realize the importance of limiting chronic opioid prescribing, multiple barriers exist in weaning patients off chronic opioids.

and chronic
opioid prescribing
in primary care

management 4) Challenges with
weaning

Abbreviations: PCP; primary care providers, GP; general practitioners

Table 2. CASP checklist questions for qualitative research										
CASP checklist questions										
	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
Study										
Achkar	yes	yes	Yes	No	yes	Yes	yes	yes	yes	valuable
Bergman	yes	yes	No	Yes	yes	No	yes	yes	yes	valuable
Barry	yes	yes	Yes	Yes	yes	Can't tell/no	yes	yes	yes	Moderate
Desveaux	yes	yes	No	Yes	yes	Yes	yes	yes	yes	valuable
Desveaux	yes	yes	Can't tell/no	Yes	yes	No	yes	yes	yes	valuable
Ekelin	yes	yes	Yes	No	yes	Yes	yes	yes	yes	valuable
Esquibel	yes	yes	Yes	No	yes	No	yes	yes	yes	valuable
Gooberman-Hill	yes	yes	Can't tell/no	Yes	yes	No	yes	yes	yes	valuable
Krebs	yes	yes	Can't tell/no	Yes	yes	No	yes	yes	yes	valuable
Prathividi	yes	yes	Can't tell/no	No	yes	No	yes	yes	yes	valuable
Rosemann	Yes	yes	yes	No	yes	yes	yes	yes	yes	valuable
Seamark	yes	yes	Yes	No	yes	No	yes	yes	yes	valuable
Tong	yes	Can't tell/no	yes	Yes	yes	No	no	yes	no	valuable

Table 3. GRADE-CERQual framework							
Head themes	Subthemes	Studies contributing to the review finding	Methodological limitations	Relevance	Adequacy	Coherence	Overall assessment of confidence
GPs caught in the middle of the opioid crisis		(26,29-33,35,37)	minor (26,30,32,33,35,37)	minor concerns (26,32)	minor concerns (26,32)	good	High confidence
	Are opioids always bad?						
	Effectivity and side-effect	(26,28,30-33, 35, 36)	minor concerns (26, 28,30,32,33)	minor concerns (26,32,36).	moderate concerns (26,28,32,36)	minor concerns	Moderate confidence
	Addiction	(29,30, 32,33,35,37,38)	minor concerns (30,32,33,35,37,38)	minor concerns (32)	minor concerns (32)	good	High confidence
	Prescription depending on the nature of pain	(30,31,35-38)	minor concerns (30,35,37,38)	minor concerns (36)	minor concerns (36)	good	High confidence
GPs weighting scale							
	GP-related factors	(29-35,37)	minor concerns (30-35,37)	minor concerns (32,34)	minor concerns (32)	good	High confidence
	Patient-related factors	(29-31,37)	minor concerns (30,37)	good	good	good	High confidence
	GP-patient relationship factors	(28-31,38)	minor concerns (28,30)	good	good	good	High confidence
GP's sense of powerlessness							
	Dumped on the GP	(29-31,35,38)	(30,35,38)	good	good	good	High confidence
	Lack of alternatives	(29-31,35,38)	(30,35,38)	good	good	good	High

							confidence
	Lack of knowledge and evidence /education	(29,30,34,35)	minor concerns (30,34,35)	Very minor concerns (34)	good	good	High confidence
	Lack of protocols and contracts	(26,30,31,34)	minor concerns (26,34)	minor concerns (26,34)	minor concerns (26,34)	Minor concerns (26)	Moderate confidence
	Lack of time	(34,38)	minor concerns (34,38)	Moderate concerns (34,38)	major concerns (24,39)	good	Low confidence

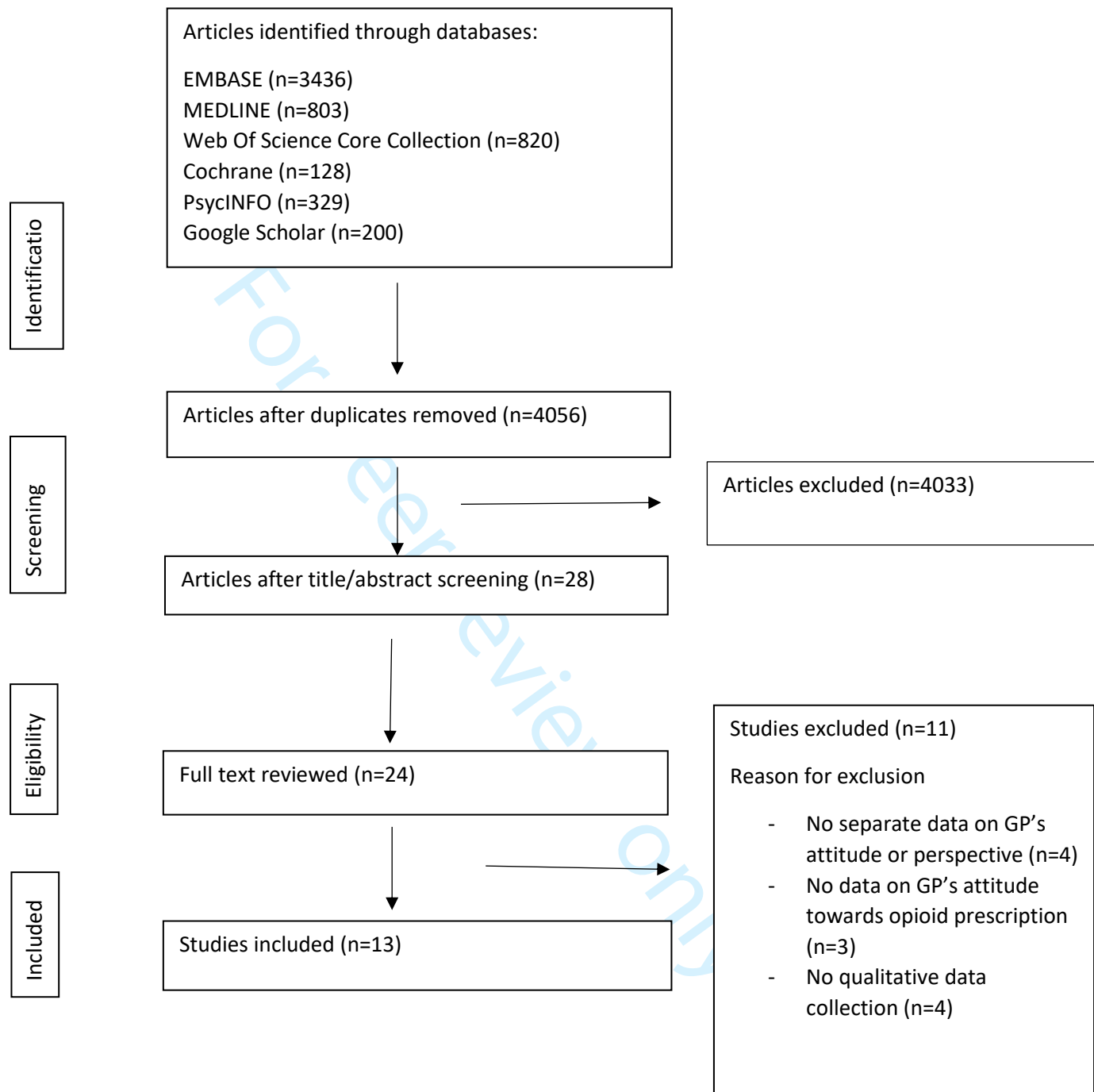


Figure 1. PRISMA Flowchart of article identification and selection

Supplementary material

original protocol for the study

General practitioners' attitude towards opioids in non cancer pain management, a qualitative systematic review and thematic analysis

R. (Rani) V. G. Punwasi, L. (Loes) de Kleijn, B.W. (Bart) Koes, J.B.M. (Hanneke) Rijkels-Otters, A. (Alessandro) Chiarotto, M. (Mario) Veen

To enable PROSPERO to focus on COVID-19 registrations during the 2020 pandemic, this registration record was automatically published exactly as submitted. The PROSPERO team has not checked eligibility.

Citation

R. (Rani) V. G. Punwasi, L. (Loes) de Kleijn, B.W. (Bart) Koes, J.B.M. (Hanneke) Rijkels-Otters, A. (Alessandro) Chiarotto, M. (Mario) Veen. General practitioners' attitude towards opioids in non cancer pain management, a qualitative systematic review and thematic analysis. PROSPERO 2020 CRD42020194561 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020194561

Review question

What is the attitude of general practitioners towards opioid treatment for non cancer pain?

Searches

The following databases will be searched from their inception date up to the 23th of June 2020; Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsycINFO, CINAHL and Google Scholar. Only publications in English or Dutch are considered eligible. The searches in the various databases will be re-run prior to the manuscript submission if more than one year passed by from the date of initial search. Backward citation tracking of eligible articles will be performed.

Types of study to be included

Studies will be included when they use qualitative methods for data collection and analysis. Studies will be excluded if qualitative methods were not applied. Studies that collect data from quantitative surveys will also be excluded. Mixed-methods studies will be included if the qualitative data is reported separately. Only published studies and studies for which full text article is available will be included. All studies are written in English or in Dutch.

To summarize the following in- and exclusion criteria will be asserted:

Inclusion criteria

1. The study uses a qualitative methods for data collection
2. The study uses mixed-method and qualitative data are reported separately
3. The study is published and available as a full-text article.
4. The study is written in English or Dutch.

Exclusion criteria:

1. The study uses quantitative methods only
2. The study uses mixed method data where the qualitative data cannot be separated
3. The study uses data from quantitative surveys

Condition or domain being studied

Attitude/perspective, opioids prescription, general practitioners

In this study the attitude, notions, beliefs and perspectives of general practitioners on opioid treatment for non cancer pain will be examined. The aim of this systematic research of qualitative studies is to shed light on general practitioners' perceptions of when or why they incorporate opioids in their non cancer pain management, but also for whom they prescribe opioids and to explain potential barriers or facilitators for prescribing it.

Participants/population

This study will include all available studies that meet the inclusion criteria that are mentioned in sections 19 to 23. Studies are excluded if they meet the exclusion criteria.

All included studies are studies performed on general practitioners (synonym: family doctors, primary care medical doctors). Studies are included if they are performed in a primary care or outpatient clinical setting and excluded if the study population consist of medical doctors working in a clinical setting. Studies examining general practitioners as well as other medical doctors or other health professionals will only be included if results regarding general practitioners are reported separately.

To summarize the following in- and exclusion criteria will be asserted:

Inclusion criteria:

1. The study includes general practitioners (synonym: family doctors, primary care medical doctors)
2. The study includes the attitude or perspective towards opioids
3. The study includes non cancer pain
4. The study is performed in primary care or outpatient clinical setting

Exclusion criteria:

1. The study population consists of a mixed group of health professionals without separation of results.
2. The study is performed in a clinical setting

Intervention(s), exposure(s)

Studies will be included if they examine general practitioners’ view, perspective, notion and/or belief of opioid treatment in non cancer pain. Studies will be excluded if they examine views on opioid abuse, opioid withdrawal or opioid tapering. Studies reporting on opioid treatment for cancer pain treatment and/or palliative care pain treatment will be included if data on non cancer pain is reported separately.

Inclusion criteria:

- 1. The study examines general practitioners’ views regarding opioid treatment for non cancer pain.

Exclusion criteria:

- 1. The study includes general practitioners’ attitude towards opioid addiction, opioid dependence, opioid abuse or opioid tapering.
- 2. The study includes opioid treatment for cancer or palliative care pain management only or does not separate data regarding opioid treatment for non cancer pain

Comparator(s)/control

Not applicable

Context

No further information, all in- and exclusion criteria are mentioned in paragraphs above.

Main outcome(s)

General practitioners’ views on opioid treatment for non cancer pain. Views can be derived through transcripts of focus group discussions, transcripts of interviews, answered question lists or through primary citations in study results e.t.c..

Measures of effect

Not applicable

Additional outcome(s)

Not applicable

Measures of effect

Not applicable

Data extraction (selection and coding)

Data selection

The electronic databases Cochrane, Embase, MEDLINE, Web of Science Core Collection, PsycINFO, CINAHL and Google Scholar were searched for eligible articles. All articles yielded were exported into Endnote, and duplicates were removed. All remaining articles were reviewed on title and abstract by two reviewers (RP and LK) independently. In case the title and abstract proved to be insufficient to evaluate eligibility, they were judged on full text.

All remaining articles will be read in full text and assessed on inclusion and exclusion criteria by both reviewers (RP and LK) independently. The included articles of both reviewers will be compared and discussed. To assure maximum retrieval manual searching of the reference lists and citation tracking of papers identified as potentially relevant at this stage will also be performed. If disagreement between reviewers occurs, a consensus method will be implemented. Nonetheless if discussion between reviewers remains, a third independent reviewer (AC) will be consulted

Data extraction and coding

Two reviewers (RP and LK) will independently extract the available data of included studies through a standardized extraction form into spreadsheets in Microsoft Excel. The following characteristics of studies and their finding will be extracted: author/year, title, study location and setting, study population, research aim and/or question, data collection and analysis method, key themes and author conclusions. Studies that included a mix of participants only data that can be attributed to general practitioners will be extracted. In studies that used both a qualitative and quantitative approach, only qualitative components will be extracted. The extraction forms of both reviewers will be compared and merged by consensus. Nonetheless, if disagreement regarding data extraction prevails a third reviewer (AC) will be consulted.

Risk of bias (quality) assessment

A quality assessment is done to test the trustworthiness of included studies by assessing the thoroughness of the study, appropriateness of conduct and credibility of data. Although quality assessment in quantitative research is a well-known tool for further in and excluding studies on the basis of their quality and/or bias, such tools are argued to be inappropriate for assessing qualitative studies. (1) Nonetheless, plenty of such tools for qualitative research are developed, not to include or exclude but to differentiate and filter the varying strengths of studies which can further be used to determine each studies impact on results. For this reason the methodological quality of included studies in this review will be assessed independently by two reviewers (RP and LK) using The Critical Appraisal Skills Programme (CASP) checklist. The 10-item CASP tool was considered to be the most suitable tool to consider the quality parameters and is a well-validated and accepted tool. (2) A consensus meeting will be held to discuss all completed checklist resulting in a merged and summarized CASP form per included study. In case of disagreement, a third independent reviewer (AC) will be consulted. For each included study a summarized CASP report will be provided in the review. Since the CASP checklist does not provide for a score and is merely used to filter all included studies, studies will not be excluded on the basis of this assessment. However the CASP checklists will provide for a thorough view on studies' weaknesses of which the impact on data synthesis will be evaluated in the result and discussion.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1. Noyes J, Hannes K, Booth A, et al. Chapter 20: qualitative research and Cochrane reviews. In: Higgins J, Green S, eds. Cochrane handbook for systematic reviews of interventions version 530 (updated October 2015). The Cochrane Collaboration, 2015:1–26

2. <http://cfkr.dk/images/file/CASP%20instrumentet.pdf>

Strategy for data synthesis

A thematic approach as described by Thomas et al, (3) will be used to synthesise findings from the primary studies. Firstly, line by line text (including participants quotation and findings of the original authors) will be extracted and coded within an Excel sheet. This step will be done by at least two reviewers (RP and LK) independently. In the second stage, descriptive themes will be developed by reviewer (RP) by looking for similarities and differences between the codes. These descriptive themes will be recorded and stored within an Excel spreadsheet and cross checked by a second reviewer (LK). Afterwards, at least two reviewers will re-examine these descriptive themes through in depth discussions based on consensus in order to generate in-depth conceptual analytical theme. In case of disagreement between the reviewers, another reviewer will be consulted.

3. Thomas J, Harden A. Methods for thematic synthesis of qualitative research in systematic reviews. BMC Med Res Methodol 2008;8:45-59.

Analysis of subgroups or subsets

Not applicable

Contact details for further information

R.V.G. Punwasi, MD, General Practitioner trainee
r.punwasi@erasmusmc.nl

Organisational affiliation of the review

Department of general practice, Erasmus University Medical Center Rotterdam, The Netherlands.

Review team members and their organisational affiliations

R. (Rani) V. G. Punwasi. Department of general practice Erasmus University Medical Center Rotterdam

Dr L. (Loes) de Kleijn. Department of general practice Erasmus University Medical Center Rotterdam

Professor B.W. (Bart) Koes. Department of general practice Erasmus University Medical Center Rotterdam

Dr J.B.M. (Hanneke) Rijkels-Otters. Department of general practice Erasmus University Medical Center Rotterdam

Dr A. (Alessandro) Chiarotto. Department of general practice Erasmus University Medical Center Rotterdam

Dr M. (Mario) Veen. Department of general practice Erasmus University Medical Center Rotterdam

Type and method of review

Systematic review, Other

Anticipated or actual start date

28 June 2020

Anticipated completion date

31 October 2020

Funding sources/sponsors

No funding received for this review.

Conflicts of interest

Language

English

Country

Netherlands

Stage of review

Review Ongoing

Details of final report/publication(s) or preprints if available

Not applicable.

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

MeSH headings have not been applied to this record

Date of registration in PROSPERO

27 July 2020

Date of first submission

26 June 2020

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Details of any existing review of the same topic by the same authors

There are no existing reviews on this topic by the same authors.

Stage of review at time of this submission

Stage	Started
Preliminary searches	Yes
Piloting of the study selection process	No
Formal screening of search results against eligibility criteria	No
Data extraction	No
Risk of bias (quality) assessment	No
Data analysis	No
<i>The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.</i>	
<i>The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.</i>	

Versions

27 July 2020

Supplementary Table S1

Supplementary Table S1 Overview of search terms used for each database	
Database	Search term
EMBASE	<p>(('opiate agonist'/de OR opiate/de OR 'analgesia'/de OR 'analgesic agent'/de OR 'narcotic analgesic agent'/de OR pain/dm_dt OR 'chronic pain'/dm_dt OR 'backache'/exp/dm_dt OR 'musculoskeletal pain'/dm_dt OR 'osteoarthritis'/exp/dm_dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*))) :Ab,ti) AND ('primary health care'/exp OR 'general practitioner'/exp OR 'general practice'/exp OR 'family medicine'/de OR (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ('health personnel attitude'/de OR 'physician attitude'/de OR 'prescription'/de OR perception/de OR attitude/de OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*))) :ab,ti) NOT ([animals]/lim NOT [humans]/lim) NOT ([conference abstract]/lim AND [1800-2017]/py)</p>

MEDLINE	(Analgesics, Opioid/ OR Analgesia/ OR Analgesics/ OR Pain/dt OR exp Back Pain/dt OR Musculoskeletal Pain/dt OR exp Osteoarthritis/dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR General Practice/ OR Family Practice/ OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Attitude of Health Personnel/ OR Prescriptions/ OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.) NOT (exp animals/ NOT humans/)
---------	--

Web of Science Core Collecion	TS=(((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/2 (relief* OR prescri* OR drug* OR agent* OR medication*)))) AND (((primary) NEAR/2 (care OR healthcare)) OR (general NEAR/2 (practitioner* OR practice*)) OR (family NEAR/2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/2 (prescription* OR prescrib*)))) AND DT=(article)
-------------------------------	--

Cochrane	((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*)))Ab,ti) AND (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*)))ab,ti)
CINAHL	(MH Analgesics, Opioid OR MH Analgesia OR MH Analgesics OR TI(opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) N2 (relief* OR prescri* OR drug* OR agent* OR medication*))) OR AB(opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) N2 (relief* OR prescri* OR drug* OR agent* OR medication*))) AND (MH Primary Health Care OR MH Physicians, Family OR MH Family Practice OR TI(((primary) N2 (care OR healthcare)) OR (general N2 (practitioner* OR practice*)) OR (family N2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps) OR AB(((primary) N2 (care OR healthcare)) OR (general N2 (practitioner* OR practice*)) OR (family N2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND (MH Attitude of Health Personnel OR MH Prescriptions, Drug OR MH Perception OR TI(attitude*

	OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) N2 (prescription* OR prescrib*)) OR AB(attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) N2 (prescription* OR prescrib*))) NOT (MH animals+ NOT MH humans+)
PsychInfo Ovid	(Opiates / OR Analgesia/ OR Analgesic Drugs / OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR Family Physicians / OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Health Personnel Attitudes / OR Prescription Drugs / OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.)
Google Scholar	opiate opioids analgesics "pain relief medication" "primary family general care health healthcare practitioner practice doctor physician practice medicine" attitude perception belief behavior behaviour decision prescription prescribing

Supplementary table S2	
Theme	Subthemes
GPs caught in the middle of the opioid crisis	<ul style="list-style-type: none">• GP’s duty to treat pain• GP’s duty towards society at large
Are opioids always bad?	<ul style="list-style-type: none">• Effectivity and side effects• addiction• Nature of pain
GPs weighting scale to decide on opioids	<ul style="list-style-type: none">• GP factors• Patient factors• GP-patient relationship factors
GP’s sense of powerlessness	<ul style="list-style-type: none">• Dumped on the GP• Lack of alternatives• Lack of knowledge and evidence /education• Lack of legislation and appropriate protocols and contracts



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1 st page (title)
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Please find checklist below
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 4-6
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 4-6
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supplementary table S1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4-6
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 4-6
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 4-6
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 4-6
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4-6
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not applicable
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 4-6
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Not applicable
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Not applicable
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Not applicable
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not applicable
Reporting bias assessment	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not applicable
	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Not applicable



PRISMA 2020 Checklist

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Section and Topic	Item #	Checklist item	Location where item is reported
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Not applicable
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	See figure 1 + page 6
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	See figure 1
Study characteristics	17	Cite each included study and present its characteristics.	See table 1
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	See table 2
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Not applicable
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	See table 3 + page 7-16
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	See table 3 + page 7-16
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	See table 3 + page 7-16
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	See table 3 + page 7-16
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	See table 3 + page 7-16
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not applicable
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	See page 16-18
	23b	Discuss any limitations of the evidence included in the review.	See page 18
	23c	Discuss any limitations of the review processes used.	See page 18
	23d	Discuss implications of the results for practice, policy, and future research.	See page 18
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	See page 3 + supplementary file
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	See page 3
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not applicable
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Not applicable

136/bmjopen-2021-054945 on 1 February 2022. Downloaded from <http://bmjopen.bmj.com/> on April 3, 2024 by guest. Protected by copyright.



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Competing interests	26	Declare any competing interests of review authors.	Not applicable
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	See table 1, selected lines and quotations from each individual study may be requested from corresponding author

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

Section and Topic	Item #	Checklist item	Reported (Yes/No)
TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	yes
Synthesis of results	6	Specify the methods used to present and synthesise results.	yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing	yes



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Reported (Yes/No)
		groups, indicate the direction of the effect (i.e. which group is favoured).	
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	no
Interpretation	10	Provide a general interpretation of the results and important implications.	yes
OTHER			
Funding	11	Specify the primary source of funding for the review.	No
Registration	12	Provide the register name and registration number.	yes

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

BMJ Open

General practitioners' attitude towards opioids for non-cancer pain: a qualitative systematic review

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-054945.R1
Article Type:	Original research
Date Submitted by the Author:	02-Oct-2021
Complete List of Authors:	Punwasi, Rani; Erasmus Medical Center, Department of General Practice de Kleijn, L.; Erasmus Medical Center, Department of General Practice Rijkels-Otters, J.B.M.; Erasmus Medical Center, Department of General Practice Veen, M.; Erasmus Medical Center, Department of General Practice Chiarotto, Alessandro; Erasmus Medical Center, Department of General Practice; Vrije Universiteit Amsterdam, Department of Health Sciences Koes, Bart; Erasmus Medical Center, General Practice
Primary Subject Heading:	General practice / Family practice
Secondary Subject Heading:	Qualitative research
Keywords:	PRIMARY CARE, PAIN MANAGEMENT, PUBLIC HEALTH

SCHOLARONE™
Manuscripts



I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our [licence](#).

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which [Creative Commons](#) licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

Original Article

General practitioners' attitude towards opioids for non-cancer pain: a qualitative systematic review

R.V.G. Punwasi, MD, general practitioner¹; L. de Kleijn, Msc, MD, GP trainee ¹; J.B.M. Rijkels-Otters, Msc, general practitioner, PhD¹; M. Veen, PhD ¹; A. Chiarotto, PT, MSc, PhD¹; Prof. B.W. Koes PhD^{1,2}

1. Department of General Practice, Erasmus University Medical Centre, Rotterdam, The Netherlands.
2. Centre for Muscle and Joint Health, University of Southern Denmark, Odense, Denmark

Total word count main text: 3928

Main paper: Box: 1 Figures: 1; Tables: 3; Supplemental material: 1 file; 2 Tables

Corresponding Author: Rani Punwasi, r.punwasi@erasmusmc.nl

ABSTRACT

Objectives

The opioid crisis has gained a strong foothold in high-income countries. In most of these countries, opioids are initiated by general practitioners (GPs). Identifying factors influencing GPs’ opioid prescription decision making may help encounter this crisis more adequately. This systematic review aims to obtain insight on GPs’ attitude towards opioid prescription and to identify possible solutions that could promote changes in the field of primary care.

Design and setting

Systematic review of qualitative studies reporting GPs’ attitude towards opioids in non-cancer pain management.

Methods

Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsychInfo, CINAHL and Google Scholar were searched up to the 17th of September 2021. Studies were selected by two independent reviewers based on prespecified eligibility criteria. Study quality was evaluated with the Critical Appraisal Skills Programme checklist, and their results were analysed using thematic analysis. Quality of evidence was rated using the GRADE-CERQual approach.

Results

Fourteen studies were included. Four themes were established using thematic analyses: 1) GPs caught in the middle of the opioid crisis, 2) Are opioids always bad?, 3) GPs weighing scale (taking patient- and therapeutic relationship-related factors into account) and 4) GP’s sense of powerlessness (lack of alternatives, support by specialists, and lack of time in justifying non-prescriptions).

Conclusion

GP’s attitude towards opioid prescribing for non-cancer pain is subject to several GP-, patient- and therapeutic relationship-related factors. Raising awareness on the inefficacy of opioids in chronic pain among GPs and patients and providing alternatives, other than opioids,

to treat chronic pain might help fight the opioid crisis. More research is needed to develop practical guidelines on appropriate opioid prescribing, tapering off opioid use and effective communication strategies.

(274 words)

Keywords: general practitioners, attitude, opioids, opioid crisis, pain management

Strength and limitations of this study

- This is the first review on this topic which is conducted by members working in the field of primary care.
- We performed an analysis on the quality of the studies, as well as their relative contributions to the findings.
- Study screening and data extraction was conducted independently by two authors, with a third author mediating any disagreements.
- Most studies were performed in the USA making generalizability across countries limited.
- We only considered publications in English and Dutch eligible for inclusion.

PROSPERO registration number CRD42020194561. Protocol also included as supplementary file.

A funding statement

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Introduction

Worldwide a disturbing trend in doctor-prescribed opioid use is visible. (1-3) Opioids are commonly incorporated in the management of moderate to severe non-cancer pain, in particular by general practitioners (GPs). (2, 4, 5) The past two decades the number of opioid prescriptions by GPs increased extensively. (6, 7) In the Netherlands, for example, GPs are responsible for approximately 75% of the first opioid prescription and 90% of the refill prescriptions. (8, 9)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Opioids show some analgesic efficacy for acute and palliative pain, but lack evidence for pain relief in chronic non-cancer pain. (10, 11) Opioids are associated with side-effects like constipation, dizziness, falls and delirium. Additionally, their addictive nature has led to the worrisome worldwide opioid crisis. (12, 13) Worldwide hospital admissions related to opioid use increased in past years. (14) The opioid crisis in USA is not comparable to the crisis seen in Europe. Yet in Europe, too, the opioid crisis is alarming with increasing opioid prescription rates, opioid related hospitalizations and deaths. (15-18) It is of utmost importance to turn the tide worldwide.

Recent NICE guidelines explicitly ask doctors to refrain from opioid prescriptions for (primary and secondary) chronic pain and recommend instead the use of conservative treatment options with no or very little side effects e.g. exercise.(19) In the UK an Opioid Expert Working Group has been installed to fight the opioid crisis. This group issued a warning on opioid medicines to inform patients about the risk of addiction. (20) In the Netherlands, GPs’ guidelines have been altered and recommend the preservation of strong opioids for restoring functional capacity in acute pain and to taper off as soon as possible. (21) Recent numbers provided by the Foundation for Pharmaceutical Statistics, an institute collecting prescription rates in the Netherlands, already demonstrate a decrease of opioid prescriptions after years of growth. (15) Despite these modest positive signs, the absolute numbers of opioid prescriptions in the Netherlands are still alarming.

Several systematic reviews elucidated multiple internal and external factors influencing GP’s opioid prescription. (22, 23) However, conclusions were based on studies published before 2019 and the authors of these reviews lacked clinical experience in the primary care setting. Since our review team mainly consists of GP’s, we believe our review will generate a deeper level of understanding which may initiate practical changes in our everyday work that can address this crisis. Therefore, the aim of this study is to gain insight into barriers and facilitators influencing GPs’ opioid prescribing and to identify possibilities for improvement of current guidelines in order to promote opioid reduction in primary care.

METHODS

Protocol registration

This study is reported following the Enhancing Transparency of Reporting the Synthesis of

Qualitative research (ENTREQ) framework. (24) The ENTREQ framework is a validated method which offers guidance for researchers and reviewers to improve the reporting of synthesis of qualitative research. The protocol for this systematic review is registered in PROSPERO (ID CRD42020194561).

Search strategy and study screening

The electronic databases Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsychInfo, CINAHL and Google Scholar were searched for articles reporting GPs' attitude on opioids prescription for non-cancer pain. Databases were searched from their inception date up to the 17th of September 2021 for articles written in English or Dutch. The search terms are presented in Supplementary Table S1. All articles yielded were exported into Endnote X7, (23) and duplicates were removed. Full-text articles describing GPs' attitude or perspective towards opioids prescription for non-cancer pain were included. Only data that could be attributed to GPs were extracted. Only qualitative studies were included. Titles and abstracts were reviewed independently by two reviewers (RP and LK). Full texts were assessed for inclusion by the same reviewers. Finally, RP and LK compared, discussed, and reconciled their included articles with a third reviewer (AC).

Data extraction and analyses

Two reviewers (RP and LK) independently extracted the following data: author/year, title, study location, study population, research aim and/or question, data collection and analysis method, key themes and author conclusions. A thematic approach as described by Thomas et al, (25) was used to synthesize findings from the primary studies. Firstly, two independent reviewers (RP and LK) extracted line by line text (including participants' quotations and findings of the original authors) and subsequently coded the text within an Excel sheet. Secondly, descriptive themes were developed by two reviewers (RP and LK) independently by looking for similarities and differences between codes. These descriptive themes were discussed and refined into one thematic code book. Finally, a third reviewer (JR) re-examined this thematic code book. Disagreement was discussed until consensus was reached and the coding structure was adapted where necessary.

Quality assessment

To assess the methodological quality of each included study, two reviewers (RP, LK), independently applied the Critical Appraisal Skills Programme (CASP) checklist for qualitative research, which consisted of 10 questions to assess the method, credibility and the relevance of the study. (26) Discrepancies between reviewers were debated with a third reviewer (MV) until consensus was reached. To assess the confidence of the review findings the Cochrane approved GRADE-CERQual (Grading of Recommendations Assessment, Development, and Evaluation – Confidence in the Evidence from Reviews of Qualitative research) approach was used scoring confidence of evidence into the following categories: good, minor, moderate, or major concerns. (26) The GRADE-CERQual concerns four domains: (1) ‘Methodological limitations’ concern the conduct of the primary study; (2) ‘Relevance’ is the extent to which the primary studies are applicable to the review; (3) ‘Adequacy of data’ is an ‘overall determination of the degree of richness and quantity of data supporting a review finding’; (4) ‘Coherence’ considers how well the findings are grounded in the primary studies. (27)

Patient and Public Involvement

There was no patient or public involvement in this review.

RESULTS

Included articles

The process of study identification and selection is summarized in Figure 1. Database searches resulted in 4,807 unduplicated, potentially relevant articles. After review of abstracts and titles, we selected 28 articles for full-text dual review. In total, 14 studies were included. (28-41) Study details of these included studies are summarized in Table 1. The sample size varied largely, ranging from 5 to 27 GPs. Five studies included solely GPs (31, 32, 35, 36, 38), whereas the other studies also interviewed other primary care providers. Nine studies were performed in North-America, one study in Australia, (38) and the remaining four in Europe. (33, 35, 39, 40)

Table 1. Details of included articles

Study first author (date)	Focus and aims	Study population	Location	Data collection methods	Data analysis method	Key themes	Author conclusions
Achkar (2017)	exploring the impact of Indiana's opioid prescription legislation on decision making and satisfaction with the prescriber-patient partnership	5 PCP's	Indiana, USA	Semi-structured interviews	inductive	1) living with chronic pain is disruptive in multiple dimensions; 2) established pain management practices were disrupted by the change in prescription rules; and 3) patient-provider relationships, which involve power dynamics and decision making, shifted in parallel to the rule change.	The Indiana law change disrupted established pain management practices and decision-making relationship between providers and their patients
Barry (2010)	examine physicians' attitudes and experiences about treating chronic noncancer pain	23 PCP's	New England, USA	face-to-face semistructured interview	Grounded theory	Physician factors, patient factors (ie, physicians' perceptions of patient factors), and logistical factors as barriers and facilitators to treating patients with chronic pain	Perceived barriers (divided into physician, patient and logistics factors) to treating patients with chronic noncancer pain are common
Bergman (2013)	Develop a better understanding of the respective experiences, perceptions, and challenges both patients with chronic pain and PCPs face communicating with each other about pain management in the primary care setting.	14 PCP's	Indiana, USA	one-time in-depth interviews	inductive	1) the role of discussing pain versus other primary care concerns 2) acknowledgment of pain and the search for objective evidence, and 3) recognition of patient individuality and consideration of relationship history.	Competing demands of primary care practice, differing beliefs about pain, and uncertainties about the appropriate place of opioid therapy in chronic pain management contributed to tensions
Desveaux (2019)	Firstly, explore Canadian GP's'	22 GPs	Ontario, Canada	semistructured interview	Framework analysis	1) Discrepancies Between GP Training and Current	the majority of GPs exhibit a general apprehension and

	perspective on opioid prescribing and the management of CNCP. And secondly to explore differences in perspectives that may be potential drivers of practice variation					2) Tensions Between the GP's Role and Patient and System Expectations 3) Effect of Length of Time in Practice 4) Strength of Therapeutic Relationships on Perspectives on Opioid Prescribing Expectations	reluctance to prescribe opioids. Number of years in practice influence GP's response
Desveaux (2019)	to understand (1) the current perspectives of FPs as it relates to opioid prescribing, and (2) the perceived barriers and enablers to guideline-adherent opioid prescribing and management of CNCP	22 GPs	Ontario, Canada	semistructured interview	Framework analysis	1) Beliefs about consequences 2) Beliefs about capabilities 3) Behavioral regulation 4) Professional role and identity	FPs face a wide range of complex (and often interacting) challenges when prescribing opioid therapy to their patients in a climate of increased prescriber scrutiny.
Ekelin (2018)	Firstly, to explore how GPs experience requests for the renewal of prescriptions for weak opioids unrelated to a consultation. Secondly, understand more about their	In total 21, consisting of GP's residents and interns	Sweden	Interview in focus groups	inductive	1) adverse feeling, 2) passive strategies, 3) active strategies	The renewal of weak opioid prescriptions without a consultation is experienced as an ethical dilemma for the GP and leads to various adverse emotions

	strategies for handling in such situations.						
Esquibel (2014)	examining the experiences of physicians adults giving opioid therapy for relief of CNCP	21 PCP's	USA	Semi-structured interview	iterative	1) Understanding the experience of pain 2) Use of pain medication 3) Doctor– patient relationship 4) Communication 5) Perception of physicians 6) Making meaning in life 7) Nonorganic factors affecting pain experience	chronic pain and the challenges of its treatment are pressing problems for patients and their physicians and for society at large, fueling initiatives and demands collaboration.
Gooberman-Hill (2011)	identifying GPs' views about prescribing strong opioids for chronic non-cancer pain with focus on chronic joint pain as the most common, disabling, and frequently encountered condition in primary care	27 GP's	Bristol, UK	Face-to-face	descriptive	1) Prescribes strong opioids for chronic joint pain 2) Are opioids the best option? 3) Managing adverse effects and assessing vulnerable patients 4) Views about addiction withdrawal and misuse	When GPs prescribe opioids the risk of adverse effect, the needs of individual patients, and previous experience of prescribing opioids are taken into account.
Goodwin (2021)	providing a more detailed understanding of barriers and facilitators to family physicians' safe prescribing of opioid analgesics to inform public health strategies that support effective	8 GP's	Nova Scotia, Atlantic Canada	semi-structured interview	thematic analysis	1) the complexity of CNCP management 2) addictions risks and prescribing tools 3) physician training 4) the physician–patient relationship 5) prescription monitoring and control 6) systemic factors.	Participants identified intersecting challenges in prescribing opioid analgesics for CNCP related to the complexity of chronic pain management, their relationships with patients, prescription monitoring and control, lack of training, and systemic issues that likely affect family physicians across Canada.

bmjopen-2021-054945 on 1 February 2022. Downloaded from http://bmjopen.bmj.com/ on April 1, 2024 by guest. Protected by copyright.

	prescribing while minimizing potential harms						
Krebs (2014)	better understanding of primary care physicians' and patients' perspectives on recommended opioid management practices and to identify potential barriers and facilitators of guideline concordant opioid management in primary care	14 PCP's	Indiana, USA	open-ended interview guides	iterative	1) inadequate time and resources for opioid management 2) relying on general impressions of risk for opioid misuse 3) viewing opioid monitoring as a "law enforcement" activity. 4) the need to protect patients from opioid-related harm.	Barriers identified in this study—inadequate time and resources, relying on general impressions of risk, and viewing opioid monitoring as a law enforcement activity—likely contribute to underuse of recommended opioid management practices in primary care
Prathividi (2019)	To explore Australian GP opioid prescribing attitudes, beliefs and knowledge, and self-reported factors influencing prescribing decisions	20 GPs	Melbourne, Australia	in-depth semi-structured interviews	Framework analysis	1) improving quality of life 2) addiction and dependence 3) autonomy and responsibility	Patient age and perceived age-related opioid harm were important factors influencing prescribing decisions.
Rosemann (2006)	giving insight into patients',	20 GPs; 20 nurse	Germany	Face-to-face interview, a	Iterative process to	1) proceedings 2) problems	GPs should focus more on disability and pain and on

	physicians' and practice nurses' views on management of OA			semi-structured interview guide with open-ended questions	identify codes from initial categories and derive new categories	3) others	giving information about treatment since these topics are often inadequately addressed
Seamark (2013)	describing the factors influencing GPs prescribing of strong opioid drugs for CNCP	17 GPs and 1 focus group	UK	semi-structured interviews and a single focus group	inductive	1) Chronic non-cancer pain is seen as different from cancer pain. 2) Difficulties in assessing pain, 3) Concerns around tolerance and addiction. 4) Effect of experience and events. 5) costs	GPs demonstrated a thoughtful attitude towards prescribing strong opioids for CNCP
Tong (2019)	identify patient- and clinician-specific factors associated with any opioid and chronic opioid prescribing in primary care	16 PCP's	Virginia, USA	semi-structured interviews	inductive	1) Inheriting patients on chronic opioids, 2) Co-occurring health problems 3) Benefits of opioids for chronic pain Management 4) Challenges with weaning	Although primary care clinicians realize the importance of limiting chronic opioid prescribing, multiple barriers exist in weaning patients off chronic opioids.
Abbreviations: PCP; primary care providers, GP; general practitioners							

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Methodological quality assessment

The critical appraisal of each included study is presented in Table 2. One study (29) was appraised as moderately valuable, since no clarification was given on how the study population was selected. The findings of the GRADE-CERQual assessments are summarized in Table 3. The overall assessment of all but one (sub)theme was rated as high or moderate confidence.

For peer review only

Table 2. CASP checklist questions for qualitative research

CASP checklist questions										
	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
Study										
Achkar	yes	yes	Yes	No	yes	Yes	yes	yes	yes	valuable
Bergman	yes	yes	No	Yes	yes	No	yes	yes	yes	valuable
Barry	yes	yes	Yes	Yes	yes	Can't tell/no	yes	yes	yes	Moderate
Desveaux	yes	yes	No	Yes	yes	Yes	yes	yes	yes	valuable
Desveaux	yes	yes	Can't tell/no	Yes	yes	No	yes	yes	yes	valuable
Ekelin	yes	yes	Yes	No	yes	Yes	yes	yes	yes	valuable
Esquibel	yes	yes	Yes	No	yes	No	yes	yes	yes	valuable
Gooberman-Hill	yes	yes	Can't tell/no	Yes	yes	No	yes	yes	yes	valuable
Goodwin	yes	yes	yes	yes	yes	no	yes	yes	yes	valuable
Krebs	yes	yes	Can't tell/no	Yes	yes	No	yes	yes	yes	valuable
Prathividi	yes	yes	Can't tell/no	No	yes	No	yes	yes	yes	valuable
Rosemann	Yes	yes	yes	No	yes	yes	yes	yes	yes	valuable
Seamark	yes	yes	Yes	No	yes	No	yes	yes	yes	valuable
Tong	yes	Can't tell/no	yes	Yes	yes	No	no	yes	no	valuable

bmjopen-2021-054945 on 1 February 2022. Downloaded from <http://bmjopen.bmj.com/> on April 3, 2024 by guest. Protected by copyright.

Table 3. GRADE-CERQual framework							
Head themes	Subthemes	Studies contributing to the review finding	Methodological limitations	Relevance	Adequacy	Coherence	Overall assessment of confidence
GPs caught in the middle of the opioid crisis		(28,31-37)	minor (28,31-34, 36, 37)	minor concerns (28,34)	minor concerns (28,34)	good	High confidence
Are opioids always bad?							
	Effectivity and side-effect	(28,30, 32-35,37,39)	minor concerns (28,30,34,35)	minor concerns (28,34,39).	Moderate concerns (28,30,34,39)	minor concerns	Moderate confidence
	Addiction	(31,32, 34,36,38-40)	minor concerns (32,34-36,39,40)	minor concerns (34)	minor concerns (34)	good	High confidence
	Prescription depending on the nature of pain	(32,33, 36-40)	minor concerns (32,36,38,39, 40)	minor concerns (39)	minor concerns (39)	good	High confidence
GPs weighting scale							
	GP-related factors	(31-39)	minor concerns (32-37,39)	minor concerns (34,36)	minor concerns (34)	good	High confidence
	Patient-related factors	(31-33, 37, 40)	minor concerns (32,37,40)	good	good	good	High confidence
	GP-patient relationship factors	(30-33,37, 40)	minor concerns (30,32,37)	good	good	good	High confidence
GP's sense of powerlessness							
	Dumped on the GP	(31-33,37,41)	minor concerns (32,37,41)	good	good	good	High confidence
	Lack of alternatives	(31-33,37,38,41)	Minor concerns (32,37,38,41)	good	good	good	High confidence
	Lack of knowledge and evidence /education	(31,32,36-38)	minor concerns (32,36-38)	Very minor concerns (36)	good	good	High confidence
	Lack of protocols and contracts	(28,32,33,36,37)	minor concerns (28,36,37)	minor concerns (28,36)	minor concerns (28,36)	Minor concerns (28)	Moderate confidence
	Lack of time	(36,37,41)	minor concerns (36,37,41)	Moderate concerns (36,41)	Major concerns (36,41)	good	Low confidence

Thematic analysis

Four main themes were constructed which were subdivided in several subthemes. (see Supplementary table S2) The four main themes are: 1) GPs caught in the middle of the opioid crisis, 2) Are opioids always bad? 3) GPs weighting scale 4) GP's sense of powerlessness. These themes are narratively explained based on data from the included articles and accompanied with quotations from their original studies. Selected quotations for each theme are provided in Box 1.

Box 1	
Subthemes	Quotations
GPs caught in the middle of the opioid crisis	
GP's duty to treat pain	<p>"I came out of school in [the 1990s]. At that point, we were undertreating chronic pain, so we were told. So we were quite gung-ho about not under-treating pain, and using opioids because they were supposedly safer than anti-inflammatories. And now, the pendulum has swung . . . there's new evidence that it might actually not be doing them any good." (31)</p> <p>"I feel like there should be some help for us in educating the public about keeping their use of opioids at the lowest possible level, it's your safety. That they shouldn't expect their pain to be zero because for chronic pain, it's probably not going to be possible to reach zero. If they can go from an 8 to a 5, that's already pretty amazing. I feel like there should be a bit more public awareness and education." (31)</p> <p>"As a primary care physician, you're being told to treat pain and to acknowledge patients' pain and to do something about it. And so, it's very difficult to walk that line. And all of those guidelines start with medications that are largely ineffective, for most people's pain." (32)</p> <p>"I think the big problem for physicians is this sort of dual message that we keep getting—that physicians are part of the opiate problem and that we're undertreating pain. physician 7" (36)</p> <p>'You know this is helpful for you. This lets you get up and do your normal day, have your normal quality of life and</p>

	without it you don't have [quality of life]. Do I have an alternative that works as well as this? Well, not really." (38)
<i>GP's duty towards society at large</i>	<p>"I think it's a very difficult balance, because there's certainly a lot of harm done by opioid prescribing by physicians. Physicians are at least responsible for controlling the supply of prescription opioids." (32)</p> <p>"I think every doctor wants to do the right thing. I think 99.9%, unless they're selling prescriptions or whatever. I think most doctors need more to do the right thing, because we didn't go into this profession to create drug addicts." (32)</p>
Are opioids always bad?	
<i>Effectiveness and side-effects</i>	<p>"Because some of us really like tramadol ... Others of us don't particularly like it at all. And it seems to cause more side effects than codeine and stuff like that and people seem to feel sicker on it, and dizzier on it, and all sorts of stuff ... but it's fitting the drug to the patient." (35)</p> <p>"I feel like a change is not indicated at this time because she needs the medication in order to do her job and go to work and help her family, and it is working for her. She is overall low-risk for abuse. I don't feel compelled to make a change for her." (41)</p>
<i>Addiction</i>	<p>"I think there's a lot of unreasonable fears, the biggest one being addiction and I think it's a grossly, grossly overstated concern, addiction. In my practice I've yet to see the patient who was put on opiates for benign pain who is addicted." (40)</p> <p>"There's always the feeling that it's going to be more difficult for somebody to stop taking opioids or needing to take more, but it would depend on the personality" (40)</p> <p>"I'm always more concerned about people who have an abusive or abusing personality, or been abusive of other drugs in the past, particularly concurrent abuse of alcohol or other drugs." (40)</p>
<i>Prescription depending on the</i>	"I have a bread and butter family medicine practice, cradle to grave. I probably prescribe about two patients a week for acute pain, a limited prescription, and then I probably have about 30 to 35 patients who are on chronic opioids. Acute,

<i>nature of pain</i>	<p>it's not really a concern. I know my patients, I have a steady practice. So if I have a time limited prescription for a purpose that a person's pulled their back post-surgery, dental, you know, they'll get 10 to 20 and then never again, I'm not concerned about that." (32)</p> <p>"I, personally, other than cancer patients or palliative care patients, have never started anyone on chronic opioids and I never would. I see no role for it in my practice." (32)</p>
GPs weighing scale	
<i>GP-related factors</i>	<p>"Um I suppose it's ... a bit of a vicious circle, it's lack of experience of getting people off the opioids ... The kind of fear that you're going to have someone hooked on it, which um I think is probably unfounded." (35)</p> <p>But I don't really see much difference in the way that I'd use opioids [in chronic joint pain] to the way I'd use them in palliative care, I mean the principles are exactly the same of getting the dose right and ... titrating the dose with a liquid. (35)</p> <p>'One of the reasons why I fear these medications so much or I hate them is because I don't like being in the situation where I have to now say something to this person. I fear how are they going to react? Are they going to get angry at me? Are they going to leave my care?' (38)</p> <p>" You just pick it up over the years, so I'm sure I've been moulded by the successes and the failures which have come my way in 27 years of general practice, yeah sure we all learn on the hoof, don't we?" (40)</p> <p>"I'm not as slow to treat with opiates now as I was 30 years ago, and I'm sufficiently bigheaded that even if another doctor with the title consultant thought it was inappropriate I'd still go ahead and do it. If there was no other way of controlling someone's pain, and having discussed it with the patient, I'm prepared to do it.' (40)</p>
<i>Patient-related factors</i>	<p>" I think if someone's history shows that they have an addictive personality, whether it be street drugs, alcohol, smoking pot, whatever that theoretical concern is, but the patients I've used opiates for in noncancer are nearly always the elderly with joint pain and I don't have any concerns about them." (40)</p>

GP-patient relationship factors	<p>““I think the ones who trust me, knowing that I’m trying to help, won’t leave angry.” (31)</p> <p>“..., and that is exactly what they’re doing. And sometimes they succeed. And then I feel bad because of it. I think, now I’ve sort of failed as a doctor.” (33)</p> <p>"But he kept coming for appoint- ments and being aggressive about it. Verbally aggressive and the problem is, he had genuine pain...I tried everything. It was very uncomfort- able each visit because he is basi- cally, in an aggressive way, saying, I’m not helping [him] with the pain. – Physician 8" (36)</p>
GP’s sense of powerlessness	
Dumped on the GP	<p>“It doesn’t seem reasonable or right or medical. You can’t really support this prescription that someone else has issued. You can’t really take over this and stand for your own conviction” (33)</p> <p>“These are prescription medications- they’re coming from somewhere. It’s us who are prescribing it, so we need to try and stop that. It might not be the GPs who are doing it, but we are by far the most accessible. We can try and address this issue. I see it as our duty to try and get them off these things- that us a collective of doctors have actually hooked them onto [opioids]’ (38)</p> <p>“She is seeing a psychiatrist, a pain specialist, an orthopedist, and a rheumatologist. She’s got all of these people involved in her care but, for some reason, I’m the person who stuck with her pain med management and nobody is super-eager to touch that.” (41)</p>
Lack of alternatives	<p>“I think the challenge, for me, is when you talk about decreasing, or trying to, patients kind of look at you and say ‘But I still have pain. What do I do?’ And often, there are not many other options. I don’t have anywhere else [to send them] . . . [so I] say yeah, I will do this for you. Sometimes you just don’t have it. And I think, for me, that’s the emotional part. . . . You’re caught between the college and trying to help this person, and the medical evidence and the lack of resources out there for people that should be there.” (31)</p> <p>“I find it’s just challenging because I don’t know what else to offer. It’s more that you feel bad for these people because</p>

	<p>they are in pain and even though these medications aren't good for pain really, I don't know what else to do for them." (31)</p> <p>"Where's the support? Yeah, but where's the multidisciplinary approach? There aren't any community resources out there to help us." (32)</p>
<i>Lack of knowledge and evidence /education</i>	<p>"There isn't any patient support material. I just have the guidelines and I'm supposed to relay the information to them. And I'm relaying the information to a client that's very resistant to change. I have to be like a pharmaceutical rep. I have to detail the patient. I have to get them to buy into the risk of the high doses. I don't have any support material for that. I don't have any evidence or graphs or charts to present to the patient to say, 'Hey, if you're on a Benzo and a narcotic, you're at a higher risk of dying.'" (32)</p> <p>"...there had been no instruction whatsoever. I had no didactic training in pain management. Other than what you learn on the street. – Physician 2" (36)</p>
<i>Lack of legislation and appropriate protocols and contracts</i>	<p>"These are the rules. You know the rules. They're not my rules. Uh, this is the law and we can both agree that, you know, and those situations really practice in a way that's against the law. Hum, and so this makes it, it makes it more clear and objective and greatly reduces that kind of degree of emotional energy that was stressful prior to that. (28)</p>
<i>Lack of time</i>	<p>"In the community, [a family physician] might have a 5- or a 7- or 10- or 15-minute [appointment], and they totally have inadequate time to cover it. So, it can come up where you run out of time. – Physician 6" (36)</p> <p>"The biggest problem in the whole thing is lack of time. Typically these are complex people with multiple problems, and you really could spend the whole appointment, more than 1 whole appointment, just talking about this [opioid agreement]. I mean, we have all these reminders that we have to do, and all the scripts, and they're wanting a podiatry consult, and an eye consult, and you need to really sit down and go through a person's record, and really try to make a more rational decision. I take it very seriously. It's serious business. What if you do create an opiate problem for somebody?..because you're not being careful enough about it? (37)</p>

GPs caught in the middle of the opioid crisis

GPs’ duty to treat pain

As healers, GPs desire to relief patient’s pain appropriately. (31, 32, 36) The subjective nature of pain complicates this mandate. (31, 33) GPs interviewed by Desveaux et al and Goodwin et al, stated that before the opioid crisis it was believed that chronic pain was often undertreated. (31, 32, 36) Some GPs found analgesics other than opioids seldom sufficient for chronic pain. (31, 33) Some GPs considered the patient as an undoubtable expert of their pain and considered it as their job to address and eliminate pain. (31, 32) And as stated by the GPs from Desveaux et al, (31) patients expect chronic pain to reach to zero. A range of emotional and psychosocial components contribute in maintaining chronic pain, making these expectations unrealistic. (32, 36) These GPs pledge for more public awareness and education among patients regarding their pain. (31)

GP’s duty towards society at large

Because of the well-known addictive character of opioids, there is a stigma in prescribing opioids these days. (34, 35) While some felt that the negative attention was unfair, others acknowledged the role that physicians have played in contributing to the opioid crisis. (32) GPs emphasized and acknowledged their gatekeeper role in fighting the opioid crisis. (28-41) However, the earlier mentioned subjective nature of pain, made some GPs doubt their medical decisions and at times created feelings of guilt of undertreating their patients. (31, 33, 34) GPs felt caught between the desire to effectively treat patient’s pain and the necessity from a societal point of view to decrease opioid prescriptions in order to alter the opioid crisis.

Are opioids always bad?

Effectiveness and side-effects

Several GPs stated that prescribing pain medication is based on a delicate balance between effective pain relief and possible side-effects. (29, 30) In this matter, individualized prescribing is essential especially in elderly and patients with comorbidities. (31, 35) When restoring functional capacity and improving the quality of life, according to the GPs

interviewed by Tong et al, the benefits of opioids at times outweighed the risks in chronic pain management. (41) Several GPs' prescribing decisions were affected by the risk that opioids might cause such as falls, drowsiness, constipation or nausea. (35, 38, 39) A small subset of self-described "militant" GPs avoided opioid prescription in non-cancer patients citing limited indications and benefits. (31, 32) GPs interviewed by Esquibel et al. agreed with this statement and claimed that opioids lack evidence for long-term effectiveness and can only cause unwanted side effects in the end. (34) However, some GPs considered weak or short acting opioids as an acceptable treatment for chronic non-cancer pain. (33) According to the interviewed GPs, the efficacy of weak or short acting opioids differed largely. Some felt more comfortable prescribing short-acting instead of long-acting opioids because this gave them a sense of control. (32) Whilst others believed short-acting opioids increased the likelihood of break-through pain. (32, 36) GP's experience regarding the efficacy of several types of weak opioids also influenced their preference. (33, 35)

Addiction

Growing knowledge on the addictive nature of opioids has made physicians reluctant to prescribe them. (40) However, some GPs described addiction and misuse as a concern that should be dealt with, but should at the same time not lead to a barrier for prescribing opioids. (35, 40) GPs interviewed by Seamark et al, take tolerance and the possibility that the patient may require more medication over the years into account when prescribing opioids. (40) Some GPs believed long-acting opioids to have a higher likelihood for addictive potential and escalating doses. (32) Many GPs also feared addiction in patients with a history of substance misuse or patients with an "abusive" personality. (32, 41)

Prescription depending on the nature of pain

As mentioned earlier, some GPs considered opioids justified in chronic pain, while other GPs considered it solely for terminal or palliative care. (31, 32, 40, 41) GPs interviewed by Ekelin et al expressed to be reluctant to prescribe opioids for psychosomatic illnesses. (33) For osteoarthritis opioid treatment was seen as overtreatment by several GPs. (39)

GPs weighing scale

GP-related factors

GPs’ experience plays a pivotal role in opioid prescription decision-making. A strong therapeutic relationship together with the number of years in practice made GPs feel more confident in prescribing opioids. (32) Previous experiences with opioid prescriptions and opioid-specific training were also mentioned as facilitators in confidently prescribing opioids. (35, 38, 40) GPs also reported to feel more confident in prescribing opioids when they had worked in addiction centres or treated patients in a palliative care setting. (32) Two studies showed that older and more experienced male doctors felt pretty confident in repeating weak opioid prescriptions. (33, 35) GPs who lacked experience in tapering off opioids, felt less confident to prescribe opioids. (35) Some GPs stated that they believed that refusing opioids or tapering off opioids would tempt patients to use illegal drugs instead. (33, 35) Some GPs with previous conflicts with patients regarding opioids avoided these analgesics “as a mechanism to avoid challenging conversations”. (32) Moreover, prevailing standards on opioids and prescription behaviour among co-workers influenced GPs’ prescription behaviour. (32, 35)

Patient-related factors

GPs declared patient’s age as an important factor in the decision making on opioid treatment. (40) In elderly, negative side-effects were considered more problematic than the addictive nature of opioids. This stands in contrast to young adults in whom the addictive nature was the main reason to not prescribe opioids. (40) In young adults opioids were often considered a last resort. Improving social relationships and housing conditions were considered more important aspects than prescribing stronger medications. (38) GPs interviewed by Seamark et al were reluctant to prescribe opioids in patients with a history of misuse or psychiatric illness. (36, 40) Some GPs expressed to have more confidence to prescribe opioids for patients who were reluctant to receive opioid treatment as opposed to patients who were demanding opioids. In the latter addiction was feared. (32)

GP-patient relationship factors

Several GPs stated “knowing the patient” facilitates decision-making in prescribing opioids. (32) GPs declared that long-standing therapeutic relationships made it easier to decide whether or not to start opioids as well as to decide whether to renew a prescription. GPs relied

on patient's pain presentation for opioid prescription; however, in case of opioid prescriptions patients might not always be the most trustworthy partner. (33) Some GPs described using a gut feeling in deciding to prescribe opioids. (37) The potential loss of a doctor–patient relationship was a major concern for GPs when declining to prescribe opioids. (32) GPs worried that they would be perceived as not empathetic if they refused to prescribe opioids. Nonetheless, they acknowledged that it is their responsibility to take dependence and addiction into account. Many GPs considered talking about opioid treatment with patients to be a major source of conflict. (32, 38)(36) Some GPs even felt manipulated by their patients when discussing pain treatment. (32) According to the GPs, the subjective nature of pain further enhanced the feeling of mistrust between the GPs and their patients. (32)

GP's sense of powerlessness

Dumped on the GP

GPs reported that specialists handle a more liberated approach in opioid prescription and do not do their due diligence in addressing the opioid crisis. (32) They report feeling that the management of opioids is often “dumped on the GP”, as a clear handover is often missing. (31, 32) GPs stated to feel uncomfortable renewing opioids when they disagreed on the indication or if they did not receive a clear handover on when and how to taper off. (30, 36, 38, 41) Some GPs stood firm and refused renewal as they found it their responsibility to get their patients off of opioids. (38) Yet other GPs stated to be more liberal in their renewals to avoid difficult conversations with their patients. (33, 36)

Lack of alternatives

GPs claimed to have a lack of alternatives when managing chronic pain. Non-pharmacological options like regular physical activity, psychotherapy and physiotherapy are often rejected by patients. (38) Long waiting lists at specialized pain centres and unaffordability of private specialists resulted in negative perceptions by GPs. (36, 38) Moreover, some GPs stated that most referrals end in opioid prescriptions. (38) GPs interviewed by Desveaux et al, (32) want a more interdisciplinary approach for chronic pain management. In older patients alternatives for opioids are even scarcer according to the GPs. Impaired kidney function and contraindications makes other pharmacological options limited. (41)

Lack of knowledge and evidence /education

GPs considered conversations about opioids as difficult as these often give rise to a lot of tensions. (31) (36) Some GPs missed patient support material to educate patient about opioid treatment. In the absence of specialized training (i.e., chronic pain management or addictions training) GPs feel less equipped to engage in conversations on opioids and therefore adhere more closely to current recommendation in opioid guidelines. (32, 36)

Lack of legislation and appropriate protocols and contracts

Some GPs expressed clear legislation as important and helpful. (28,36) Rules they can seize to justify their therapy. (28) While others reported feeling current opioid protocols were too limited for using in practice and often did not consider the lack of alternatives in primary care. (32) Some GPs stated that adhering to opioid guidelines interferes with their duty as a “healer”. (32) Negative experiences with protocols resulted in less adherence to protocols and guidelines. (32) Some GPs stated that a lack in appropriate protocols in tapering dosage resulted in avoiding opioid prescription. (31) Several physicians expressed doubts on their use of recommended opioid management practices (eg, drug screening, frequent follow-up appointments, contracts) and stated to not use protocols as often as they should. (37)

Lack of time

When justifying a denial of opioid prescription to a patient, GPs reported to be frustrated by a perceived lack of time. (36, 40)

Discussion

Principal findings

Our review yielded four main themes on GPs’ attitude towards opioid pain management. GPs’ attitude towards opioid prescribing for non-cancer pain is subject to several GP-, patient- and therapeutic relationship-related factors. The subjective nature of pain places GPs in a split position of being a healer but also a gatekeeper in the opioid crisis. The ongoing “zero tolerance” trend in experiencing pain has led to a more liberal approach in prescribing opioids among some GPs. Some GPs consider opioids justified for non-cancer pain

management if functional capacity and quality of life improve. While other GPs find opioids to have limited indication and benefit in patients with chronic non-cancer pain. There were some apparent differences among GPs individual characteristics such as age, experience, working place and GP-patient relationship. GPs who lacked experience in tapering off opioids, felt less confident to prescribe opioids. Opioid prescription behaviour among co-workers also influenced GP's individual prescription behaviour. Most GPs stated that "knowing the patient" facilitates decision-making in prescribing opioids. The potential loss of a doctor-patient relationship was a major concern for GPs when declining to prescribe opioids. GPs stated that current guidelines are too general and not properly address the problems they face every day. Lack of support by specialists and access of multidisciplinary pain centres represent a big frustration for GPs.

As demonstrated by our findings and studies on this same topic, (22, 23) the addictive nature of opioids is widely recognized in primary care and is one of the factors that make GPs refrain from prescribing opioids. However, the ineffectiveness of opioids still seem of minor importance to GPs in the trade off on deciding to prescribe or not prescribe opioids for patients with chronic pain. Even when the ineffectiveness of opioids is recognized, feeling morally obliged to alleviate pain GPs still consider opioids as a last resort describing a lack in alternatives and knowledge on how to effectively address chronic pain. Therefore, this review underlines the importance of educating GPs on effective strategies in relieving chronic pain. Another pillar in opioid reduction is educating GPs on conversation techniques to engage in difficult conversations with patients about pain and pain acceptance. Yet, broadening GPs knowledge alone will not be sufficient. In addition to previous reviews on this topic, our review highlights the importance of raising awareness among patients as well. Patients should be well informed about the impact of chronic pain and that a pain reduction to zero is often impossible. Patients have to realize that opioids are not always "the Holy Grail". Developing patient support materials were suggested as useful tools to create awareness among patients.

Consistent with previous reviews, (22, 23) a majority of the studies were conducted in the USA. In our study, four of the included studies were performed in Western Europe where opioid prescription habits are comparable to those in the Netherlands. (42) The amount of opioid prescriptions and related problems differs between the USA and Western Europe. (43) As findings of our review are primarily based on studies performed in countries with different healthcare systems, the needs and problems Dutch GPs face might differ.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

From our daily work as health professionals in the primary care we recognize the bottlenecks as set out in the four main themes of our review. The alarming numbers of opioid prescriptions and refill prescriptions among GPs demand the development of more specific guidelines which should address the problems that GPs face in their day to day work such as limited time, limited possibilities for consultation and waiting lists at multidisciplinary centres for pain. A recent Australian qualitative review analyzed GP’s attitude towards interventions aimed at reducing opioid overprescribing by GPs and proposed that co-designing guidelines with end-users (GPs) might influence their success. (44) Developing practical guidelines on opioid reduction and non-cancer pain treatment for and especially with GPs might help to turn the tide in this opioid crisis. However, guidelines alone will certainly not be enough. As was put forth by the last theme of our review, it is pivotal to improve communication between GPs and first prescribing specialists, in specific, pain specialist. As GPs we recognize the powerlessness felt when after hours of motivational talks with patients suffering from chronic pain return from high quality pain centres with opioid prescriptions without further explanation or communication.

Strengths and limitations

A strength of our study is that GPs’ perspectives on opioid treatment for non-cancer pain were synthesized by a review team of mainly GPs using a transparent and robust methodology to generate new and comprehensive themes reflecting data across different geographical settings. One might argue that our direct involvement in primary care might cause a source of bias, however we believe that being involved in the field led to a deeper level of understanding. This review has included eight studies (28, 31-33, 38, 39, 41) that have not been included in the two most recent reviews on this topic. (22, 23) Five of these included studies (31, 32, 38, 41) (36) were published in 2019 -2021, making this review the most up to date qualitative review regarding this topic. Five studies were excluded in this systematic review because these also included data on other primary care givers such as nurse practitioners or doctor’s assistants and the data regarding GPs could not be separated. By excluding these studies we are aware that we might have lost some potentially useful data. Not each study has equally contributed to the presented data. In *Rosemann et al.* (39) only one paragraph was dedicated to GPs’ attitude towards opioid and in specific for joint pain. In Achkar et al, only two GPs were included making the data extraction minimal. Moreover, a majority of the studies were

performed in the USA making generalizability limited.

Conclusion

This review describes how GPs' as "healers of pain" and "guardians of the community" deliberate the use of opioids in chronic pain. A zero-tolerance policy towards pain by both doctors and patients, a wish for strong doctor-patient relationships with a fear for difficult conversations, a lack of knowledge and protocols on effective strategies to treat chronic pain in primary care, a lack of time and missing collaboration with specialists complicate the decision to refrain from opioids in chronic pain. Future research to develop practical guidelines on appropriate opioid prescribing, tapering off opioid use and effective communication strategies not only for GPs but also fine-tuned by GPs are necessary to turn the tide on this opioid crisis.

Author's contribution

RP and LK made substantial contribution to the conception and/or design of the work. RP, LK, JR and AC contributed to the acquisition, analysis and interpretation of data for the work. RP, LK, JR, AC, MV and BK provided input to drafting the work and/ or revising it critically and gave final approval of the version to be published.

Competing interests

All authors declare that they have no competing interests.

Funding

All authors declare to have not received a specific grant for this research from any funding agency in the public, commercial or non-profit sector.

Data sharing statement

Data are available upon reasonable request.

Figure 1. PRISMA Flowchart of article identification and selection

Ethics approval: ethical approval was not sought for the present study because this article is a systematic review

Literature

1. De Conno F, Ripamonti C, Brunelli C. Opioid purchases and expenditure in nine western European countries: 'are we killing off morphine?'. *Palliat Med.* 2005;19(3):179-84. DOI: 10.1191/0269216305pm1002oa
2. Fischer B, Jones W, Rehm J. Trends and changes in prescription opioid analgesic dispensing in Canada 2005-2012: an update with a focus on recent interventions. *BMC Health Serv Res.* 2014;14:90. DOI: 10.1186/1472-6963-14-90
3. Kelly JP, Cook SF, Kaufman DW, Anderson T, Rosenberg L, Mitchell AA. Prevalence and characteristics of opioid use in the US adult population. *Pain.* 2008;138(3):507-13. DOI: 10.1016/j.pain.2008.01.027
4. The Royal Australian College of General Practitioners. Prescribing drugs of dependence in general practice. Part C1: Opioids.2017; East MelbourneVictoria: RACGP.
5. Ashaye T, Hounsime N, Carnes D, Taylor SJC, Homer K, Eldridge S, et al. Opioid prescribing for chronic musculoskeletal pain in UK primary care: results from a cohort analysis of the COPERS trial. *BMJ Open.* 2018;8(6):e019491. DOI: 10.1136/bmjopen-2017-019491
6. Verhamme KMC. Are we facing an opioid crisis in Europe? *Lancet Public Health.* 2019;4(10)(e483-e484).
7. Weesie Y. Ook Nederlandse huisartsen schrijven vaker opioïden voor. *Huisarts en Wetenschap.* 2018;61(10)(10).
8. van Brakel. Verslag rondetafelconferentie VWS:gebruik opoïden.2018.
9. Nivel. Available from: https://www.nivel.nl/sites/default/files/bestanden/Rapport_voorschrijven_opioiden.pdf.
10. Jensen MK, Thomsen AB, Hojsted J. 10-year follow-up of chronic non-malignant pain patients: opioid use, health related quality of life and health care utilization. *Eur J Pain.* 2006;10(5):423-33. DOI: 10.1016/j.ejpain.2005.06.001
11. Tucker HR, Scaff K, McCloud T, Carlomagno K, Daly K, Garcia A, et al. Harms and benefits of opioids for management of non-surgical acute and chronic low back pain: a systematic review. *Br J Sports Med.* 2020;54(11):664. DOI: 10.1136/bjsports-2018-099805

12. Benyamin R, Trescot AM, Datta S, Buenaventura R, Adlaka R, Sehgal N, et al. Opioid complications and side effects. *Pain Physician*. 2008;11(2 Suppl):S105-20.
13. Up-to-date, pain control in the critically ill adult patient.
14. Hauser W, Schug S, Furlan AD. The opioid epidemic and national guidelines for opioid therapy for chronic noncancer pain: a perspective from different continents. *Pain Rep*. 2017;2(3):e599. DOI: 10.1097/PR9.0000000000000599
15. Stichting Farmaceutische Kengetallen. 2020. Available from https://www.sfk.nl/publicaties/PW/2020/copy_of_scores-kwaliteitsindicatoren-ook-grafi-sch-weergegeven.
16. van Amsterdam J, van den Brink W. The Misuse of Prescription Opioids: A Threat for Europe? *Curr Drug Abuse Rev*. 2015;8(1):3-14. DOI: 10.2174/187447370801150611184218
17. Publications Office of the European Union. European Monitoring Centre for Drugs and Drug Addiction European drug report 2018: trends and developments. Luxembourg; 2018.
18. Dart RC, Severtson SG, Bucher-Bartelson B. Trends in opioid analgesic abuse and mortality in the United States. *N Engl J Med*. 2015;372(16):1573-4. DOI: 10.1056/NEJMc1501822
19. NICE guideline. Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain. Published: 07 April 2021.
20. Pharmatimes. Available from http://www.pharmatimes.com/web_exclusives/is_the_uk_facing_its_own_opioid_crisis_1315
21. Nederlandse Huisartsen Genootschap. 2018. NHG standaard pijn
22. Kennedy MC, Pallotti P, Dickinson R, Harley C. 'If you can't see a dilemma in this situation you should probably regard it as a warning': a metasynthesis and theoretical modelling of general practitioners' opioid prescription experiences in primary care. *Br J Pain*. 2019;13(3):159-76. DOI: 10.1177/2049463718804572
23. Toye F, Seers K, Barker KL. Meta-ethnography to understand healthcare professionals' experience of treating adults with chronic non-malignant pain. *BMJ Open*. 2017;7(12):e018411. DOI: 10.1136/bmjopen-2017-018411
24. Tong A, Flemming K, McInnes E, Oliver S, Craig J. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol*. 2012;12:181. DOI: 10.1186/1471-2288-12-181
25. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol*. 2008;8:45. DOI: 10.1186/1471-2288-8-45

26. CASP Tool. Available from: <http://cfkr.dk/images/file/CASP%20instrumentet.pdf>.
27. Lewin S, Glenton C, Munthe-Kaas H, Carlsen B, Colvin CJ, Gulmezoglu M, et al. Using qualitative evidence in decision making for health and social interventions: an approach to assess confidence in findings from qualitative evidence syntheses (GRADE-CERQual). *PLoS Med*. 2015;12(10):e1001895. DOI: 10.1371/journal.pmed.100189
28. Al Achkar M, Revere D, Dennis B, MacKie P, Gupta S, Grannis S. Exploring perceptions and experiences of patients who have chronic pain as state prescription opioid policies change: a qualitative study in Indiana. *BMJ Open*. 2017;7(11):e015083. DOI: 10.1136/bmjopen-2016-015083
29. Barry DT, Irwin KS, Jones ES, Becker WC, Tetrault JM, Sullivan LE, et al. Opioids, chronic pain, and addiction in primary care. *J Pain*. 2010;11(12):1442-50. DOI: 10.1016/j.jpain.2010.04.002
30. Bergman AA, Matthias MS, Coffing JM, Krebs EE. Contrasting tensions between patients and PCPs in chronic pain management: a qualitative study. *Pain Med*. 2013;14(11):1689-97. DOI: 10.1111/pme.12172
31. Desveaux L, Saragosa M, Kithulegoda N, Ivers NM. Family Physician Perceptions of Their Role in Managing the Opioid Crisis. *Ann Fam Med*. 2019;17(4):345-51. DOI: 10.1370/afm.2413
32. Desveaux L, Saragosa M, Kithulegoda N, Ivers NM. Understanding the behavioural determinants of opioid prescribing among family physicians: a qualitative study. *BMC Fam Pract*. 2019;20(1):59. DOI: 10.1186/s12875-019-0947-2
33. Ekelin E, Hansson A. The dilemma of repeat weak opioid prescriptions - experiences from swedish GPs. *Scand J Prim Health Care*. 2018;36(2):180-8. DOI: 10.1080/02813432.2018.1459241
34. Esquibel AY, Borkan J. Doctors and patients in pain: Conflict and collaboration in opioid prescription in primary care. *Pain*. 2014;155(12):2575-82. DOI: 10.1016/j.pain.2014.09.018
35. Gooberman-Hill R, Heathcote C, Reid CM, Horwood J, Beswick AD, Williams S, et al. Professional experience guides opioid prescribing for chronic joint pain in primary care. *Fam Pract*. 2011;28(1):102-9. DOI: 10.1093/fampra/cmz083
36. Goodwin J, Kirkland S. Barriers and facilitators encountered by family physicians prescribing opioids for chronic non-cancer pain: a qualitative study. *Health Promot Chronic Dis Prev Can*. 2021;41(6):182-9. DOI: 10.24095/hpcdp.41.6.03

37. Krebs EE, Bergman AA, Coffing JM, Campbell SR, Frankel RM, Matthias MS. Barriers to guideline-concordant opioid management in primary care--a qualitative study. *J Pain*. 2014;15(11):1148-55. DOI: 10.1016/j.jpain.2014.08.006
38. Prathivadi P, Barton C, Mazza D. Qualitative insights into the opioid prescribing practices of Australian GP. *Fam Pract*. 2020;37(3):412-7. DOI: 10.1093/fampra/cmz083
39. Rosemann T, Wensing M, Joest K, Backenstrass M, Mahler C, Szecsenyi J. Problems and needs for improving primary care of osteoarthritis patients: the views of patients, general practitioners and practice nurses. *BMC Musculoskelet Disord*. 2006;7:48. DOI: 10.1186/1471-2474-7-48
40. Seamark D, Seamark C, Greaves C, Blake S. GPs prescribing of strong opioid drugs for patients with chronic non-cancer pain: a qualitative study. *Br J Gen Pract*. 2013;63(617):e821-8. DOI: 10.3399/bjgp13X675403
41. Tong ST, Hochheimer CJ, Brooks EM, Sabo RT, Jiang V, Day T, et al. Chronic Opioid Prescribing in Primary Care: Factors and Perspectives. *Ann Fam Med*. 2019;17(3):200-6. DOI: 10.1370/afm.2357
42. Kalkman GA, Kramers C, van Dongen RT, van den Brink W, Schellekens A. Trends in use and misuse of opioids in the Netherlands: a retrospective, multi-source database study. *Lancet Public Health*. 2019;4(10):e498-e505. DOI: 10.1016/S2468-2667(19)30128-8
43. Meyer A, LeClair C, McDonald JV. Prescription Opioid Prescribing in Western Europe and the United States. *R I Med J* (2013). 2020;103(2):45-8.
44. Prathivadi P, Lockett T, Barton C, Holliday S, Mazza D. General practitioner attitudes towards systems-level opioid prescribing interventions: A pooled secondary qualitative analysis. *Aust J Gen Pract*. 2021;50(5):309-16. DOI: 10.31128/AJGP-04-20-5381

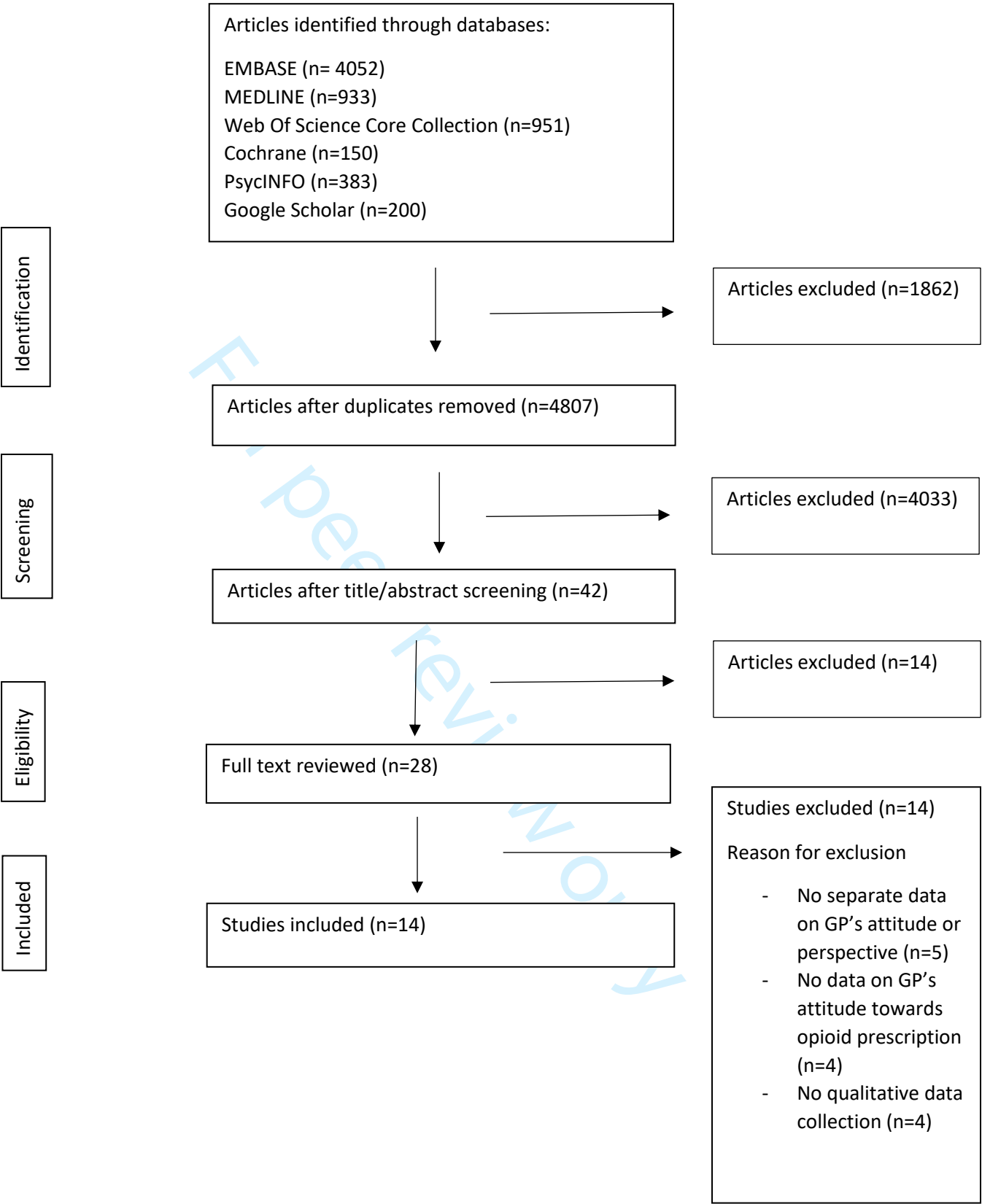


Figure 1. PRISMA Flowchart of article identification and selection

Supplementary material

original protocol for the study

General practitioners' attitude towards opioids in non cancer pain management, a qualitative systematic review and thematic analysis

R. (Rani) V. G. Punwasi, L. (Loes) de Kleijn, B.W. (Bart) Koes, J.B.M. (Hanneke) Rijkels-Otters, A. (Alessandro) Chiarotto, M. (Mario) Veen

To enable PROSPERO to focus on COVID-19 registrations during the 2020 pandemic, this registration record was automatically published exactly as submitted. The PROSPERO team has not checked eligibility.

Citation

R. (Rani) V. G. Punwasi, L. (Loes) de Kleijn, B.W. (Bart) Koes, J.B.M. (Hanneke) Rijkels-Otters, A. (Alessandro) Chiarotto, M. (Mario) Veen. General practitioners' attitude towards opioids in non cancer pain management, a qualitative systematic review and thematic analysis. PROSPERO 2020 CRD42020194561 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020194561

Review question

What is the attitude of general practitioners towards opioid treatment for non cancer pain?

Searches

The following databases will be searched from their inception date up to the 23th of June 2020; Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsycINFO, CINAHL and Google Scholar. Only publications in English or Dutch are considered eligible. The searches in the various databases will be re-run prior to the manuscript submission if more than one year passed by from the date of initial search. Backward citation tracking of eligible articles will be performed.

Types of study to be included

Studies will be included when they use qualitative methods for data collection and analysis. Studies will be excluded if qualitative methods were not applied. Studies that collect data from quantitative surveys will also be excluded. Mixed-methods studies will be included if the qualitative data is reported separately. Only published studies and studies for which full text article is available will be included. All studies are written in English or in Dutch.

To summarize the following in- and exclusion criteria will be asserted:

Inclusion criteria

- 1. The study uses a qualitative methods for data collection
- 2. The study uses mixed-method and qualitative data are reported separately
- 3. The study is published and available as a full-text article.
- 4. The study is written in English or Dutch.

Exclusion criteria:

- 1. The study uses quantitative methods only
- 2. The study uses mixed method data where the qualitative data cannot be separated
- 3. The study uses data from quantitative surveys

Condition or domain being studied

Attitude/perspective, opioids prescription, general practitioners

In this study the attitude, notions, beliefs and perspectives of general practitioners on opioid treatment for non cancer pain will be examined. The aim of this systematic research of qualitative studies is to shed light on general practitioners' perceptions of when or why they incorporate opioids in their non cancer pain management, but also for whom they prescribe opioids and to explain potential barriers or facilitators for prescribing it.

Participants/population

This study will include all available studies that meet the inclusion criteria that are mentioned in sections 19 to 23. Studies are excluded if they meet the exclusion criteria.

All included studies are studies performed on general practitioners (synonym: family doctors, primary care medical doctors). Studies are included if they are performed in a primary care or outpatient clinical setting and excluded if the study population consist of medical doctors working in a clinical setting. Studies examining general practitioners as well as other medical doctors or other health professionals will only be included if results regarding general practitioners are reported separately.

To summarize the following in- and exclusion criteria will be asserted:

Inclusion criteria:

- 1. The study includes general practitioners (synonym: family doctors, primary care medical doctors)
- 2. The study includes the attitude or perspective towards opioids
- 3. The study includes non cancer pain
- 4. The study is performed in primary care or outpatient clinical setting

Exclusion criteria:

- 1. The study population consists of a mixed group of health professionals without separation of results.
- 2. The study is performed in a clinical setting

Intervention(s), exposure(s)

Studies will be included if they examine general practitioners' view, perspective, notion and/or belief of opioid treatment in non cancer pain. Studies will be excluded if they examine views on opioid abuse, opioid withdrawal or opioid tapering. Studies reporting on opioid treatment for cancer pain treatment and/or palliative care pain treatment will be included if data on non cancer pain is reported separately.

Inclusion criteria:

1. The study examines general practitioners' views regarding opioid treatment for non cancer pain.

Exclusion criteria:

1. The study includes general practitioners' attitude towards opioid addiction, opioid dependence, opioid abuse or opioid tapering.

2. The study includes opioid treatment for cancer or palliative care pain management only or does not separate data regarding opioid treatment for non cancer pain

Comparator(s)/control

Not applicable

Context

No further information, all in- and exclusion criteria are mentioned in paragraphs above.

Main outcome(s)

General practitioners' views on opioid treatment for non cancer pain. Views can be derived through transcripts of focus group discussions, transcripts of interviews, answered question lists or through primary citations in study results e.t.c..

Measures of effect

Not applicable

Additional outcome(s)

Not applicable

Measures of effect

Not applicable

Data extraction (selection and coding)

Data selection

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

The electronic databases Cochrane, Embase, MEDLINE, Web of Science Core Collection, PsycINFO, CINAHL and Google Scholar were searched for eligible articles. All articles yielded were exported into Endnote, and duplicates were removed. All remaining articles were reviewed on title and abstract by two reviewers (RP and LK) independently. In case the title and abstract proved to be insufficient to evaluate eligibility, they were judged on full text. All remaining articles will be read in full text and assessed on inclusion and exclusion criteria by both reviewers (RP and LK) independently. The included articles of both reviewers will be compared and discussed. To assure maximum retrieval manual searching of the reference lists and citation tracking of papers identified as potentially relevant at this stage will also be performed. If disagreement between reviewers occurs, a consensus method will be implemented. Nonetheless if discussion between reviewers remains, a third independent reviewer (AC) will be consulted

Data extraction and coding

Two reviewers (RP and LK) will independently extract the available data of included studies through a standardized extraction form into spreadsheets in Microsoft Excel. The following characteristics of studies and their finding will be extracted: author/year, title, study location and setting, study population, research aim and/or question, data collection and analysis method, key themes and author conclusions. Studies that included a mix of participants only data that can be attributed to general practitioners will be extracted. In studies that used both a qualitative and quantitative approach, only qualitative components will be extracted. The extraction forms of both reviewers will be compared and merged by consensus. Nonetheless, if disagreement regarding data extraction prevails a third reviewer (AC) will be consulted.

Risk of bias (quality) assessment

A quality assessment is done to test the trustworthiness of included studies by assessing the thoroughness of the study, appropriateness of conduct and credibility of data. Although quality assessment in quantitative research is a well-known tool for further in and excluding studies on the basis of their quality and/or bias, such tools are argued to be inappropriate for assessing qualitative studies. (1) Nonetheless, plenty of such tools for qualitative research are developed, not to include or exclude but to differentiate and filter the varying strengths of studies which can further be used to determine each studies impact on results. For this reason the methodological quality of included studies in this review will be assessed independently by two reviewers (RP and LK) using The Critical Appraisal Skills Programme (CASP) checklist. The 10-item CASP tool was considered to be the most suitable tool to consider the quality parameters and is a well-validated and accepted tool. (2) A consensus meeting will be held to discuss all completed checklist resulting in a merged and summarized CASP form per included study. In case of disagreement, a third independent reviewer (AC) will be consulted. For each included study a summarized CASP report will be provided in the review. Since the CASP checklist does not provide for a score and is merely used to filter all included studies, studies will not be excluded on the basis of this assessment. However the CASP checklists will provide for a thorough view on studies' weaknesses of which the impact on data synthesis will be evaluated in the result and discussion.

1. Noyes J, Hannes K, Booth A, et al. Chapter 20: qualitative research and Cochrane reviews. In: Higgins J, Green S, eds. Cochrane handbook for systematic reviews of interventions version 530 (updated October 2015). The Cochrane Collaboration, 2015:1–26
2. <http://cfkr.dk/images/file/CASP%20instrumentet.pdf>

Strategy for data synthesis

A thematic approach as described by Thomas et al, (3) will be used to synthesise findings from the primary studies. Firstly, line by line text (including participants quotation and findings of the original authors) will be extracted and coded within an Excel sheet. This step will be done by at least two reviewers (RP and LK) independently. In the second stage, descriptive themes will be developed by reviewer (RP) by looking for similarities and differences between the codes. These descriptive themes will be recorded and stored within an Excel spreadsheet and cross checked by a second reviewer (LK). Afterwards, at least two reviewers will re-examine these descriptive themes through in depth discussions based on consensus in order to generate in-depth conceptual analytical theme. In case of disagreement between the reviewers, another reviewer will be consulted.

3. Thomas J, Harden A. Methods for thematic synthesis of qualitative research in systematic reviews. BMC Med Res Methodol 2008;8:45-59.

Analysis of subgroups or subsets

Not applicable

Contact details for further information

R.V.G. Punwasi, MD, General Practitioner trainee
r.punwasi@erasmusmc.nl

Organisational affiliation of the review

Department of general practice, Erasmus University Medical Center Rotterdam, The Netherlands.

Review team members and their organisational affiliations

R. (Rani) V. G. Punwasi. Department of general practice Erasmus University Medical Center Rotterdam
Dr L. (Loes) de Kleijn. Department of general practice Erasmus University Medical Center Rotterdam
Professor B.W. (Bart) Koes. Department of general practice Erasmus University Medical Center Rotterdam
Dr J.B.M. (Hanneke) Rijkels-Otters. Department of general practice Erasmus University Medical Center Rotterdam
Dr A. (Alessandro) Chiarotto. Department of general practice Erasmus University Medical Center Rotterdam

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Dr M. (Mario) Veen. Department of general practice Erasmus University Medical Center Rotterdam

Type and method of review

Systematic review, Other

Anticipated or actual start date

28 June 2020

Anticipated completion date

31 October 2020

Funding sources/sponsors

No funding received for this review.

Conflicts of interest

Language

English

Country

Netherlands

Stage of review

Review Ongoing

Details of final report/publication(s) or preprints if available

Not applicable.

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

MeSH headings have not been applied to this record

Date of registration in PROSPERO

27 July 2020

Date of first submission

26 June 2020

Details of any existing review of the same topic by the same authors

There are no existing reviews on this topic by the same authors.

Stage of review at time of this submission

Stage	Started
Preliminary searches	Yes
Piloting of the study selection process	No
Formal screening of search results against eligibility criteria	No
Data extraction	No
Risk of bias (quality) assessment	No
Data analysis	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

27 July 2020

Supplementary Table S1

Supplementary Table S1 Overview of search terms used for each database	
Database	Search term
EMBASE	('opiate agonist'/de OR opiate/de OR 'analgesia'/de OR 'analgesic agent'/de OR 'narcotic analgesic agent'/de OR pain/dm_dt OR 'chronic pain'/dm_dt OR 'backache'/exp/dm_dt OR 'musculoskeletal pain'/dm_dt OR 'osteoarthritis'/exp/dm_dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*))) :Ab,ti) AND ('primary health care'/exp OR 'general practitioner'/exp OR 'general practice'/exp OR 'family medicine'/de OR (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ('health personnel attitude'/de OR 'physician attitude'/de OR 'prescription'/de OR perception/de OR attitude/de OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*))) :ab,ti) NOT ([animals]/lim NOT [humans]/lim) NOT ([conference abstract]/lim AND [1800-2017]/py)

MEDLINE	(Analgesics, Opioid/ OR Analgesia/ OR Analgesics/ OR Pain/dt OR exp Back Pain/dt OR Musculoskeletal Pain/dt OR exp Osteoarthritis/dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR General Practice/ OR Family Practice/ OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Attitude of Health Personnel/ OR Prescriptions/ OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.) NOT (exp animals/ NOT humans/)
---------	--

Web of Science Core Collecion	TS=(((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/2 (relief* OR prescri* OR drug* OR agent* OR medication*)))) AND (((primary) NEAR/2 (care OR healthcare)) OR (general NEAR/2 (practitioner* OR practice*)) OR (family NEAR/2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/2 (prescription* OR prescrib*)))) AND DT=(article)
-------------------------------	--

Cochrane	<p>((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*))) :ab,ti) AND (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*))) :ab,ti)</p>
CINAHL	<p>(MH Analgesics, Opioid OR MH Analgesia OR MH Analgesics OR TI(opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) N2 (relief* OR prescri* OR drug* OR agent* OR medication*))) OR AB(opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) N2 (relief* OR prescri* OR drug* OR agent* OR medication*))) AND (MH Primary Health Care OR MH Physicians, Family OR MH Family Practice OR TI(((primary) N2 (care OR healthcare)) OR (general N2 (practitioner* OR practice*)) OR (family N2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps) OR AB(((primary) N2 (care OR healthcare)) OR (general N2 (practitioner* OR practice*)) OR (family N2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND (MH Attitude of Health Personnel OR MH Prescriptions, Drug OR MH Perception OR TI(attitude*</p>

	OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) N2 (prescription* OR prescrib*)) OR AB(attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) N2 (prescription* OR prescrib*))) NOT (MH animals+ NOT MH humans+)
PsychInfo Ovid	(Opiates / OR Analgesia/ OR Analgesic Drugs / OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR Family Physicians / OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Health Personnel Attitudes / OR Prescription Drugs / OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.)
Google Scholar	opiate opioids analgesics "pain relief medication" "primary family general care health healthcare practitioner practice doctor physician practice medicine" attitude perception belief behavior behaviour decision prescription prescribing

Supplementary table S2	
Theme	Subthemes
GPs caught in the middle of the opioid crisis	<ul style="list-style-type: none"> • GP's duty to treat pain • GP's duty towards society at large
Are opioids always bad?	<ul style="list-style-type: none"> • Effectivity and side effects • addiction • Nature of pain
GPs weighting scale to decide on opioids	<ul style="list-style-type: none"> • GP factors • Patient factors • GP-patient relationship factors
GP's sense of powerlessness	<ul style="list-style-type: none"> • Dumped on the GP • Lack of alternatives • Lack of knowledge and evidence /education • Lack of legislation and appropriate protocols and contracts

Supplementary Table S1. Overview of search terms used for each database

Database	Search term
EMBASE	('opiate agonist'/de OR opiate/de OR 'analgesia'/de OR 'analgesic agent'/de OR 'narcotic analgesic agent'/de OR pain/dm_dt OR 'chronic pain'/dm_dt OR 'backache'/exp/dm_dt OR 'musculoskeletal pain'/dm_dt OR 'osteoarthritis'/exp/dm_dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*)))Ab,ti) AND ('primary health care'/exp OR 'general practitioner'/exp OR 'general practice'/exp OR 'family medicine'/de OR (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ('health personnel attitude'/de OR 'physician attitude'/de OR 'prescription'/de OR perception/de OR attitude/de OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*)))ab,ti) NOT ([animals]/lim NOT [humans]/lim) NOT ([conference abstract]/lim AND [1800-2017]/py)

MEDLINE	(Analgesics, Opioid/ OR Analgesia/ OR Analgesics/ OR Pain/dt OR exp Back Pain/dt OR Musculoskeletal Pain/dt OR exp Osteoarthritis/dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescription* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR General Practice/ OR Family Practice/ OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Attitude of Health Personnel/ OR Prescriptions/ OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescribe*))).ab,ti.) NOT (exp animals/ NOT humans/)
---------	--

Web of Science Core Collecion	TS=(((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/2 (relief* OR prescri* OR drug* OR agent* OR medication*)))) AND (((primary) NEAR/2 (care OR healthcare)) OR (general NEAR/2 (practitioner* OR practice*)) OR (family NEAR/2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/2 (prescription* OR prescrib*)))) AND DT=(article)
-------------------------------	--

Supplementary table S2. Themes and subthemes	
Theme	Subthemes
GPs caught in the middle of the opioid crisis	<ul style="list-style-type: none"> • GP's duty to treat pain • GP's duty towards society at large
Are opioids always bad?	<ul style="list-style-type: none"> • Effectivity and side effects • addiction • Nature of pain
GPs weighting scale to decide on opioids	<ul style="list-style-type: none"> • GP factors • Patient factors • GP-patient relationship factors
GP's sense of powerlessness	<ul style="list-style-type: none"> • Dumped on the GP • Lack of alternatives • Lack of knowledge and evidence /education • Lack of legislation and appropriate protocols and contracts



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1 st page (title)
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Please find checklist below
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 4-6
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 4-6
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supplementary table S1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4-6
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 4-6
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 4-6
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 4-6
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4-6
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not applicable
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 4-6
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Not applicable
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Not applicable
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Not applicable
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not applicable
Reporting bias assessment	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not applicable
	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Not applicable

136/bmjopen-2021-054945 on 1 February 2022. Downloaded from <http://bmjopen.bmj.com/> on April 3, 2024 by guest. Protected by copyright.



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Not applicable
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	See figure 1 + page 6
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	See figure 1
Study characteristics	17	Cite each included study and present its characteristics.	See table 1
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	See table 2
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Not applicable
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	See table 3 + page 7-16
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	See table 3 + page 7-16
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	See table 3 + page 7-16
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	See table 3 + page 7-16
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	See table 3 + page 7-16
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not applicable
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	See page 16-18
	23b	Discuss any limitations of the evidence included in the review.	See page 18
	23c	Discuss any limitations of the review processes used.	See page 18
	23d	Discuss implications of the results for practice, policy, and future research.	See page 18
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	See page 3 + supplementary file
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	See page 3
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not applicable
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Not applicable



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Competing interests	26	Declare any competing interests of review authors.	Not applicable
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	See table 1, selected lines and quotations from each individual study may be requested from corresponding author

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

Section and Topic	Item #	Checklist item	Reported (Yes/No)
TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	yes
Synthesis of results	6	Specify the methods used to present and synthesise results.	yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing	yes



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Reported (Yes/No)
		groups, indicate the direction of the effect (i.e. which group is favoured).	
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	no
Interpretation	10	Provide a general interpretation of the results and important implications.	yes
OTHER			
Funding	11	Specify the primary source of funding for the review.	No
Registration	12	Provide the register name and registration number.	yes

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

BMJ Open

General practitioners' attitudes towards opioids for non-cancer pain: a qualitative systematic review

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-054945.R2
Article Type:	Original research
Date Submitted by the Author:	08-Dec-2021
Complete List of Authors:	Punwasi, Rani; Erasmus Medical Center, Department of General Practice de Kleijn, L.; Erasmus Medical Center, Department of General Practice Rijkels-Otters, J.B.M.; Erasmus Medical Center, Department of General Practice Veen, M.; Erasmus Medical Center, Department of General Practice Chiarotto, Alessandro; Erasmus Medical Center, Department of General Practice; Vrije Universiteit Amsterdam, Department of Health Sciences Koes, Bart; Erasmus Medical Center, General Practice
Primary Subject Heading:	General practice / Family practice
Secondary Subject Heading:	Qualitative research
Keywords:	PRIMARY CARE, PAIN MANAGEMENT, PUBLIC HEALTH

SCHOLARONE™
Manuscripts



I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our [licence](#).

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which [Creative Commons](#) licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

Original Article

General practitioners' attitudes towards opioids for non-cancer pain: a qualitative systematic review

R.V.G. Punwasi, MD, general practitioner¹; L. de Kleijn, Msc, MD, GP trainee ¹; J.B.M. Rijkels-Otters, MD, Msc, general practitioner, PhD¹; M. Veen, PhD ¹; A. Chiarotto, PT, MSc, PhD¹; Prof. B.W. Koes PhD^{1,2}

141. Department of General Practice, Erasmus University Medical Centre, Rotterdam, The Netherlands.

162. Centre for Muscle and Joint Health, University of Southern Denmark, Odense, Denmark

Total word count main text: 3877

Main paper: Box: 1 Figures: 1; Tables: 3; Supplemental material: 1 file; 2 Tables

Corresponding Author: Rani Punwasi, r.punwasi@erasmusmc.nl

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

ABSTRACT

Objectives

Worldwide the use of opioids, both doctor-prescribed and illicit, has increased. In most countries, opioids are first prescribed by general practitioners (GPs). Identifying factors that influence GPs’ opioid prescription decision making may help reduce opioid misuse and overuse. We performed a systematic review to gain insight into GP attitudes towards opioid prescription and to identify possible solutions to promote changes in the field of primary care.

Design and setting

Systematic review of qualitative studies reporting GPs’ attitudes towards opioid use in non-cancer pain management.

Methods

We searched Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsychInfo, CINAHL and Google Scholar. Two independent reviewers selected studies based on prespecified eligibility criteria. Study quality was evaluated with the Critical Appraisal Skills Programme checklist, and their results were analysed using thematic analysis. Quality of evidence was rated using the GRADE-CERQual approach.

Results

We included fourteen studies. Four themes were established using thematic analyses: 1) GPs caught in the middle of “the opioid crisis”; 2) Are opioids always bad?; 3) GPs’ weighing scale, taking patient- and therapeutic relationship-related factors into account; and 4) GPs’ sense of powerlessness - lack of alternatives, support by specialists, and lack of time in justifying non-prescriptions.

Conclusion

GP attitudes towards opioid prescribing for non-cancer pain are subject to several GP-, patient- and therapeutic relationship-related factors. Raising GP and patient awareness on the inefficacy of opioids in chronic non-cancer pain management and providing non-opioid alternatives to treat chronic pain might help to promote opioid reduction in primary care.

1 More research is needed to develop practical guidelines on appropriate opioid prescribing,
2 tapering off opioid use and adopting effective communication strategies.

3 (270 words)

4 Keywords: general practitioners, attitude, opioids, opioid crisis, pain management

5 **Strength and limitations of this study**

- 6 - To the best of our knowledge, this is the first review on this topic conducted by
7 professionals working directly in primary care.
- 8 - We performed an analysis on the quality of the studies, as well as their relative
9 contributions to the findings.
- 10 - Study screening and data extraction was conducted independently by two authors,
11 with a third author mediating any disagreements.
- 12 - Most studies were performed in the USA making generalizability across countries
13 limited.
- 14 - We only included publications written in English and in Dutch.

16 **PROSPERO registration number** CRD42020194561. Protocol also included as
17 supplementary file.

19 **A funding statement**

21 Author LK is a PhD student and participated to this work as part of her PhD project.
22 However, this research received no specific grant from any funding agency in the public,
23 commercial or not-for-profit sectors.

25 **Introduction**

26 Worldwide we are seeing a trend in increased opioid prescribing. (1-3) The number of opioid-
27 related deaths and hospitalizations are also increasing. (2,3) Opioids are commonly prescribed
28 in the management of moderate to severe non-cancer pain, in particular by general
29 practitioners (GPs). (2, 4, 5) In the past two decades, the number of opioid prescriptions by
30 GPs has increased substantially. (6, 7) In the Netherlands, for example, GPs are responsible
31 for approximately 75% of first opioid prescriptions and 90% of repeat prescriptions. (8, 9)

Opioids can reduce acute and palliative pain, but have been shown to be ineffective for managing chronic non-cancer pain. (10, 11) Opioids are associated with side-effects like constipation, dizziness, falls and delirium. Additionally, using opioids can lead to opioid tolerance, dependence and even addiction; it is partly this addictive nature of opioids that has led to an increase of prescription opioid use disorder. (12, 13) Worldwide, hospital admissions related to opioid use have increased in past years. (14) In the USA more than 4% of the adult population currently misuse prescription opioids, and the number of opioid-related deaths per year increased six-fold between 1999-2017. (15,16) While this “opioid crisis”, as it is often called in the USA, is not comparable with the increase in opioid misuse in Europe, opioid prescription rates are nonetheless increasing and opioid-related hospitalizations and deaths are concerning. (17-20) It is of utmost importance to decrease inappropriate opioid prescription rates.

NICE guidelines explicitly ask doctors to refrain from opioid prescriptions for primary and secondary chronic pain (pain lasting > 3 months) and recommend instead the use of conservative treatment options with no or very few side effects, such as exercise. (21) In the UK, an Opioid Expert Working Group has been installed to address the increase of opioid use and misuse. This group has come with multiple recommendations that should inform patients about the risk of opioid dependence and addiction. (22,23) In the Netherlands, GP guidelines currently limit recommendations for strong opioids to restoring functional capacity in acute pain and to taper off as soon as possible. (24) The Foundation for Pharmaceutical Statistics, an institute collecting prescription rates in the Netherlands, reported a 6% decrease in opioid prescriptions in 2019 compared to 2018, the first reduction seen after years of growth. (17) Despite these modest positive signs, more action is needed to further decrease opioid prescriptions in the coming years.

Several systematic reviews elucidated multiple factors influencing GP opioid prescriptions. (25-26) However, conclusions were based on studies published before 2019 and the authors of these reviews lacked clinical experience in primary care. Commonly, guidelines and protocols in general practice are developed by the discipline itself in order to capture the “richness of texture experienced in family practice”. (27,28) Since our review team mainly consists of GPs, or professionals involved in primary care research, we believe our clinical experience will generate a deeper level of understanding which may initiate practical changes in clinical practice that can address the increase of prescription opioid use disorder. Therefore, the aims

of this study are to gain insight into GPs' attitudes, and the barriers and facilitators influencing GPs' opioid prescription practices, and to identify possible strategies to promote opioid reduction in primary care and to reduce the harm associated with opioid misuse.

METHODS

Protocol registration

This study followed the Enhancing Transparency of Reporting the Synthesis of Qualitative research (ENTREQ) framework. (29) The ENTREQ framework is a validated method which offers guidance for researchers and reviewers to improve the reporting of synthesis of qualitative research. We prospectively registered our protocol in PROSPERO (ID CRD42020194561).

Search strategy and study screening

We searched Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsychInfo, CINAHL and Google Scholar for articles reporting GP attitudes on opioids prescription for non-cancer pain. Databases were searched from their inception date up to the 17th of September 2021 for articles written in English or Dutch. The search terms are presented in Supplementary Table S1. All articles yielded were exported into Endnote X7, (30) and duplicates were removed. Two reviewers (RP and LK) independently reviewed titles and abstract. The same reviewers assessed full texts for inclusion. Finally, RP and LK compared, discussed, and reconciled their included articles with a third reviewer (AC). We identified qualitative studies describing GP attitudes or perspectives towards opioids prescription for non-cancer pain. We only extracted data attributed to GPs.

Data extraction and analyses

Two reviewers (RP and LK) independently extracted the following data: author/year, title, study location, sample characteristics, research aim, data collection and analysis method, key themes and author conclusions. A thematic approach as described by Thomas et al, (31) was used to synthesize findings from the primary studies. First, two independent reviewers (RP and LK) extracted line by line text including participants' quotations and findings of the original authors, and coded the text within an Excel sheet. Second, the same two reviewers (RP and LK) independently developed descriptive themes by looking for similarities and differences among codes. These descriptive themes were discussed and refined into one

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1 thematic code book. Finally, a third reviewer (JR) re-examined this thematic code book.
2 Disagreement was discussed until consensus was reached and the coding structure was
3 adapted where necessary.

4
5 *Quality assessment*

6 To assess the methodological quality of each included study, two reviewers (RP, LK)
7 independently completed the Critical Appraisal Skills Programme (CASP) checklist for
8 qualitative research, which consists of 10 questions that evaluates method, credibility and the
9 relevance of the study. (32) Discrepancies between reviewers were discussed with a third
10 reviewer (MV) until consensus was reached. We used the GRADE-CERQual (Grading of
11 Recommendations Assessment, Development, and Evaluation – Confidence in the Evidence
12 from Reviews of Qualitative research) approach to categorize confidence in the evidence into
13 the following categories: good, minor, moderate, or major concerns. (32) The GRADE-
14 CERQual covers four domains: (1) ‘Methodological limitations’ concern the conduct of each
15 primary study; (2) ‘Relevance’ is the extent to which the primary studies are applicable to the
16 review; (3) ‘Adequacy of data’ evaluates the overall richness and quantity of evidence; (4)
17 ‘Coherence’ considers how well the findings are grounded in the primary studies. (33)

18
19 *Patient and Public Involvement*

20 There was no patient or public involvement in this review.

21
22
23 **RESULTS**

24 *Included articles*

25 Database searches resulted in 4,807 unduplicated, potentially relevant articles. (Figure 1)
26 After review of abstracts and titles, we selected 28 articles for full-text double screening. In
27 total, 14 studies were included. (Table 1) (34-47) The sample size ranged from 5 to 27 GPs.
28 Five studies included solely GPs (37, 38, 41, 42, 44), and remaining studies also interviewed
29 other primary care providers (PCP). In the USA, the term PCP is used for physicians
30 providing primary care and consists of family doctors, internists, paediatrics, geriatrics,

1 gynaecologists and nurse practitioners and physician assistants. (48) For the current study, we
2 only included family doctors. Nine studies were performed in North-America, one study in
3 Australia (44), and the remaining four in Europe (39, 41, 45, 46).

For peer review only

bmjopen-2021-054945 on 1 February 2022. Downloaded from http://bmjopen.bmj.com/ on April 3, 2024 by guest. Protected by copyright.

Table 1. Details of included articles							
Study first author (date)	Focus and aims	Sample characteristics	Location	Data collection methods	Data analysis method	Key themes	Author conclusions
Achkar (2017)	exploring the impact of Indiana’s opioid prescription legislation decision making and satisfaction with the prescriber–patient partnership	5 PCPs	Indiana, USA	semi-structured interviews	inductive	1) living with chronic pain is disruptive in multiple dimensions; 2) established pain management practices were disrupted by the change in prescription rules; and 3) patient–provider relationships, which involve power dynamics and decision making, shifted in parallel to the rule change.	the Indiana law change disrupted established pain management practices and decision-making relationship between providers and their patients
Barry (2010)	examine physicians’ attitudes and experiences about treating chronic noncancer pain	23 PCPs	New England, USA	face-to-face semistructured interview	grounded theory	physician factors, patient factors (i.e., physicians’ perceptions of patient factors), and logistical factors as barriers and facilitators to treating patients with chronic pain	perceived barriers (divided into physician, patient and logistics factors) to treating patients with chronic non-cancer pain are common
Bergman (2013)	develop a better understanding of the respective experiences, perceptions, and challenges both patients with chronic pain and PCPs face communicating with each other about pain management in the primary care setting.	14 PCPs	Indiana, USA	one-time in-depth interviews	inductive	1) the role of discussing pain versus other primary care concerns 2) acknowledgment of pain and the search for objective evidence, and 3) recognition of patient individuality and consideration of relationship history.	competing demands of primary care practice, differing beliefs about pain, and uncertainties about the appropriate place of opioid therapy in chronic pain management contributed to tensions
Desveaux (2019)	firstly, explore Canadian GP’s’	22 GPs	Ontario, Canada	semi-structured	framework analysis	1) discrepancies Between GP Training and Current	the majority of GPs exhibit a general apprehension and

	perspective on opioid prescribing and the management of CNCP. And secondly to explore differences in perspectives that may be potential drivers of practice variation			interview		2) tensions Between the GP's Role and Patient and System Expectations 3) effect of Length of Time in Practice 4) strength of Therapeutic Relationships on Perspectives on Opioid Prescribing Expectations	reluctance to prescribe opioids. Number of years in practice influence GP's response
Desveaux (2019)	to understand (1) the current perspectives of FPs as it relates to opioid prescribing, and (2) the perceived barriers and enablers to guideline-adherent opioid prescribing and management of CNCP	22 GPs	Ontario, Canada	semistructured interview	framework analysis	1) beliefs about consequences 2) beliefs about capabilities 3) behavioral regulation 4) professional role and identity	FPs face a wide range of complex (and often interacting) challenges when prescribing opioid therapy to their patients in a climate of increased prescriber scrutiny.
Ekelin (2018)	firstly, to explore how GPs experience requests for the renewal of prescriptions for weak opioids unrelated to a consultation. Secondly, understand more about their	in total 21, consisting of GP's residents and interns	Sweden	interview in focus groups	inductive	1) adverse feeling, 2) passive strategies, 3) active strategies	the renewal of weak opioid prescriptions without a consultation is experienced as an ethical dilemma for the GP and leads to various adverse emotions

bmjopen-2021-054945 on February 20, 2022. Downloaded from <http://bmjopen.bmj.com/> on April 3, 2024 by guest. Protected by copyright.

	strategies for handling in such situations.						
Esquibel (2014)	examining the experiences of physicians adults giving opioid therapy for relief of CNCP	21 PCPs	USA	semi-structured interview	iterative	1) understanding the experience of pain 2) use of pain medication 3) doctor– patient relationship 4) communication 5) perception of physician 6) making meaning in life 7) nonorganic factors affecting pain experience	chronic pain and the challenges of its treatment are pressing problems for patients and their physicians and for society at large, fueling initiatives and demands collaboration.
Gooberman-Hill (2011)	identifying GPs’ views about prescribing strong opioids for chronic non-cancer pain with focus on chronic joint pain as the most common, disabling, and frequently encountered condition in primary care	27 GPs	Bristol, UK	face-to-face	descriptive	1) prescribes strong opioids for chronic joint pain 2) are opioids the best option? 3) managing adverse effects and assessing vulnerable patients 4) views about addiction, withdrawal and misuse	when GPs prescribe opioids the risk of adverse effect, the needs of individual patients, and previous experience of prescribing opioids are taken into account.
Goodwin (2021)	providing a more detailed understanding of barriers and facilitators to family physicians’ safe prescribing of opioid analgesics to inform public health strategies that support effective	8 GPs	Nova Scotia, Atlantic Canada	semi-structured interview	thematic analysis	1) the complexity of CNCP management 2) addictions risks and prescribing tools 3) physician training 4) the physician–patient relationship 5) prescription monitoring and control 6) systemic factors.	participants identified intersecting challenges in prescribing opioid analgesics for CNCP related to the complexity of chronic pain management, their relationships with patients, prescription monitoring and control, lack of training, and systemic issues that likely affect family physicians across Canada.

	prescribing while minimizing potential harms						
Krebs (2014)	better understanding of primary care physicians' and patients' perspectives on recommended opioid management practices and to identify potential barriers and facilitators of guideline concordant opioid management in primary care	14 PCPs	Indiana, USA	open-ended interview guides	iterative	1) inadequate time and resources for opioid management 2) relying on general impressions of risk for opioid misuse 3) viewing opioid monitoring as a "law enforcement" activity. 4) the need to protect patients from opioid-related harm.	barriers identified in this study—inadequate time and resources, relying on general impressions of risk, and viewing opioid monitoring as a law enforcement activity—likely contribute to underuse of recommended opioid management practices in primary care
Prathividi (2019)	to explore Australian GP opioid prescribing attitudes, beliefs and knowledge, and self-reported factors influencing prescribing decisions	20 GPs	Melbourne, Australia	in-depth semi-structured interviews	framework analysis	1) improving quality of life 2) addiction and dependence 3) autonomy and responsibility	patient age and perceived age-related opioid harm were important factors influencing prescribing decisions.
Rosemann (2006)	giving insight into patients',	20 GPs; 20 nurse	Germany	face-to-face interview, a	iterative process to	1) proceedings 2) problems	GPs should focus more on disability and pain and on

	physicians' and practice nurses' views on management of OA			semi-structured interview guide with open-ended questions	identify codes from initial categories and derive new categories	3) others	giving information about treatment since these topics are often inadequately addressed
Seamark (2013)	describing the factors influencing GPs prescribing of strong opioid drugs for CNCP	17 GPs and 1 focus group	UK	semi-structured interviews and a single focus group	inductive	1) chronic non-cancer pain is seen as different from cancer pain. 2) difficulties in assessing pain, 3) concerns around tolerance and addiction. 4) effect of experience and events. 5) costs	GPs demonstrated a thoughtful attitude towards prescribing strong opioids for CNCP
Tong (2019)	identify patient- and clinician-specific factors associated with any opioid and chronic opioid prescribing in primary care	16 PCP's	Virginia, USA	semi-structured interviews	inductive	1) inheriting patients on chronic opioids, 2) Co-occurring health problems 3) benefits of opioids for chronic pain Management 4) challenges with weaning	although primary care clinicians realize the importance of limiting chronic opioid prescribing, multiple barriers exist in weaning patients off chronic opioids.
Abbreviations: PCP; primary care providers, GP; general practitioners							

Methodological quality assessment

One study (35) was appraised as moderately valuable, since no clarification was given on how the study sample was selected (Table 2). The overall assessment of all but one (sub)theme was rated as high or moderate confidence (Table 3).

For peer review only

Table 2. CASP checklist questions for qualitative research										
CASP checklist questions										
	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
Study										
Achkar	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Valuable
Bergman	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Valuable
Barry	Yes	Yes	Yes	Yes	Yes	Can't tell/no	Yes	Yes	Yes	Moderate
Desveaux	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Desveaux	Yes	Yes	Can't tell/no	Yes	Yes	No	Yes	Yes	Yes	Valuable
Ekelin	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Valuable
Esquibel	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Valuable
Gooberman-Hill	Yes	Yes	Can't tell/no	Yes	Yes	No	Yes	Yes	Yes	Valuable
Goodwin	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Valuable
Krebs	Yes	Yes	Can't tell/no	Yes	Yes	No	Yes	Yes	Yes	Valuable
Prathividi	Yes	Yes	Can't tell/no	No	Yes	No	Yes	Yes	Yes	Valuable
Rosemann	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Valuable
Seamark	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Valuable
Tong	Yes	Can't tell/no	Yes	Yes	Yes	No	No	Yes	No	Valuable

Table 3. GRADE-CERQual framework

Head themes	Subthemes	Studies contributing to the review finding	Methodological limitations	Relevance	Adequacy	Coherence	Overall assessment of confidence
GPs caught in the middle of “the opioid crisis”		(34,37-43)	minor concerns (34,37-40, 42, 43)	minor concerns (34,40)	minor concerns (34,40)	good	high confidence
Are opioids always bad?							
	Effectivity and side-effect	(34,36, 38-41,43,45)	minor concerns (34,36,40,41)	minor concerns (34,40,45).	moderate concerns (34,36,40,45)	minor concerns	moderate confidence
	Addiction	(37,38, 40,42,44-46)	minor concerns (38,40-42,45,46)	minor concerns (40)	minor concerns (40)	good	high confidence
	Prescription depending on the nature of pain	(38,39, 42-46)	minor concerns (38,42,44-46)	minor concerns (45)	minor concerns (45)	good	high confidence
GPs weighting scale							
	GP-related factors	(37-46)	minor concerns (38-43,45)	minor concerns (40,42)	minor concerns (40)	good	high confidence
	Patient-related factors	(37-39, 43, 46)	minor concerns (36,43,46)	good	good	good	high confidence
	GP-patient relationship factors	(36-39,43, 46)	minor concerns (36,38,43)	good	good	good	high confidence
GP's sense of powerlessness							
	Dumped on the GP	(37-39,43,47)	minor concerns (38,43,47)	good	good	good	high confidence
	Lack of alternatives	(37-39,43,44,47)	minor concerns (38,43,44,47)	good	good	good	high confidence
	Lack of knowledge and evidence /education	(37,38,42-44)	minor concerns (38,42-44)	very minor concerns (42)	good	good	high confidence
	Lack of protocols and Contracts	(34,38,39,42,43)	minor concerns (34,42,43)	minor concerns (34,42)	minor concerns (34,40)	minor concerns (34)	moderate confidence
	Lack of time	(42,43,47)	minor concerns (42,43,47)	moderate concerns (42,47)	major concerns (42,47)	good	low confidence

Thematic analysis

Four main themes were constructed and further subdivided into several subthemes. (Supplementary table S2) The four main themes were: 1) GPs caught in the middle of “the opioid crisis”, 2) Are opioids always bad?, 3) GP’s weighting scale, 4) GP’s sense of powerlessness. These themes are narratively explained based on data from the included articles and accompanied with quotations from their original studies (Box 1).

Box 1	
Subthemes	Quotations
GPs caught in the middle of “the opioid crisis”	
GP’s duty to treat pain	<p>“I came out of school in [the 1990s]. At that point, we were undertreating chronic pain, so we were told. So we were quite gung-ho about not under-treating pain, and using opioids because they were supposedly safer than anti-inflammatories. And now, the pendulum has swung . . . there’s new evidence that it might actually not be doing them any good.” (37)</p> <p>“I feel like there should be some help for us in educating the public about keeping their use of opioids at the lowest possible level, it’s your safety. That they shouldn’t expect their pain to be zero because for chronic pain, it’s probably not going to be possible to reach zero. If they can go from an 8 to a 5, that’s already pretty amazing. I feel like there should be a bit more public awareness and education.” (37)</p> <p>“As a primary care physician, you’re being told to treat pain and to acknowledge patients’ pain and to do something about it. And so, it’s very difficult to walk that line. And all of those guidelines start with medications that are largely ineffective, for most people’s pain.” (38)</p> <p>"I think the big problem for physicians is this sort of dual message that we keep getting—that physicians are part of the opiate problem and that we’re undertreating pain. physician 7" (42)</p> <p>‘You know this is helpful for you. This lets you get up and do your normal day, have your normal quality of life and without it you don’t have [quality of life]. Do I have an</p>

	alternative that works as well as this? Well, not really.” (44)
<i>GP’s duty towards society at large</i>	<p>“I think it’s a very difficult balance, because there’s certainly a lot of harm done by opioid prescribing by physicians. Physicians are at least responsible for controlling the supply of prescription opioids.” (38)</p> <p>“I think every doctor wants to do the right thing. I think 99.9%, unless they’re selling prescriptions or whatever. I think most doctors need more to do the right thing, because we didn’t go into this profession to create drug addicts.” (38)</p>
<i>Are opioids always bad?</i>	
<i>Effectiveness and side-effects</i>	<p>“Because some of us really like tramadol ... Others of us don’t particularly like it at all. And it seems to cause more side effects than codeine and stuff like that and people seem to feel sicker on it, and dizzier on it, and all sorts of stuff ... but it’s fitting the drug to the patient.” (41)</p> <p>“I feel like a change is not indicated at this time because she needs the medication in order to do her job and go to work and help her family, and it is working for her. She is overall low-risk for abuse. I don’t feel compelled to make a change for her.” (47)</p>
<i>Addiction</i>	<p>““I think there’s a lot of unreasonable fears, the biggest one being addiction and I think it’s a grossly, grossly overstated concern, addiction. In my practice I’ve yet to see the patient who was put on opiates for benign pain who is addicted.” (46)</p> <p>“There’s always the feeling that it’s going to be more difficult for somebody to stop taking opioids or needing to take more, but it would depend on the personality” (46)</p> <p>“I’m always more concerned about people who have an abusive or abusing personality, or been abusive of other drugs in the past, particularly concurrent abuse of alcohol or other drugs. “ (46)</p>
<i>Prescription depending on the</i>	<p>“I have a bread and butter family medicine practice, cradle to grave. I probably prescribe about two patients a week for acute pain, a limited prescription, and then I probably have about 30 to 35 patients who are on chronic opioids. Acute, it’s not really a concern. I know my patients, I have a steady</p>

<i>nature of pain</i>	<p>practice. So if I have a time limited prescription for a purpose that a person's pulled their back post-surgery, dental, you know, they'll get 10 to 20 and then never again, I'm not concerned about that." (38)</p> <p>"I, personally, other than cancer patients or palliative care patients, have never started anyone on chronic opioids and I never would. I see no role for it in my practice." (38)</p>
GP's weighing scale	
<i>GP-related factors</i>	<p>"Um I suppose it's ... a bit of a vicious circle, it's lack of experience of getting people off the opioids ... The kind of fear that you're going to have someone hooked on it, which um I think is probably unfounded." (41)</p> <p>But I don't really see much difference in the way that I'd use opioids [in chronic joint pain] to the way I'd use them in palliative care, I mean the principles are exactly the same of getting the dose right and ... titrating the dose with a liquid. (41)</p> <p>'One of the reasons why I fear these medications so much or I hate them is because I don't like being in the situation where I have to now say something to this person. I fear how are they going to react? Are they going to get angry at me? Are they going to leave my care?' (44)</p> <p>" You just pick it up over the years, so I'm sure I've been moulded by the successes and the failures which have come my way in 27 years of general practice, yeah sure we all learn on the hoof, don't we?" (46)</p> <p>"I'm not as slow to treat with opiates now as I was 30 years ago, and I'm sufficiently bigheaded that even if another doctor with the title consultant thought it was inappropriate I'd still go ahead and do it. If there was no other way of controlling someone's pain, and having discussed it with the patient, I'm prepared to do it.' (46)</p>
<i>Patient-related factors</i>	<p>" I think if someone's history shows that they have an addictive personality, whether it be street drugs, alcohol, smoking pot, whatever that theoretical concern is, but the patients I've used opiates for in noncancer are nearly always the elderly with joint pain and I don't have any concerns about them." (46)</p>
<i>GP-patient</i>	<p>"“I think the ones who trust me, knowing that I'm trying to help, won't leave angry.” (37)</p>

<p><i>relationship factors</i></p>	<p>“... , and that is exactly what they’re doing. And sometimes they succeed. And then I feel bad because of it. I think, now I’ve sort of failed as a doctor.” (39)</p> <p>"But he kept coming for appointments and being aggressive about it. Verbally aggressive and the problem is, he had genuine pain...I tried everything. It was very uncomfortable each visit because he is basically, in an aggressive way, saying, I’m not helping [him] with the pain. – Physician 8" (42)</p>
<p>GP’s sense of powerlessness</p>	
<p><i>Dumped on the GP</i></p>	<p>“It doesn’t seem reasonable or right or medical. You can’t really support this prescription that someone else has issued. You can’t really take over this and stand for your own conviction” (39)</p> <p>“These are prescription medications- they’re coming from somewhere. It’s us who are prescribing it, so we need to try and stop that. It might not be the GPs who are doing it, but we are by far the most accessible. We can try and address this issue. I see it as our duty to try and get them off these things that us a collective of doctors have actually hooked them onto [opioids]’ (44)</p> <p>“She is seeing a psychiatrist, a pain specialist, an orthopedist, and a rheumatologist. She’s got all of these people involved in her care but, for some reason, I’m the person who stuck with her pain med management and nobody is super-eager to touch that.” (47)</p>
<p><i>Lack of alternatives</i></p>	<p>“I think the challenge, for me, is when you talk about decreasing, or trying to, patients kind of look at you and say ‘But I still have pain. What do I do?’ And often, there are not many other options. I don’t have anywhere else [to send them] . . . [so I] say yeah, I will do this for you. Sometimes you just don’t have it. And I think, for me, that’s the emotional part. . . . You’re caught between the college and trying to help this person, and the medical evidence and the lack of resources out there for people that should be there.” (37)</p> <p>“I find it’s just challenging because I don’t know what else to offer. It’s more that you feel bad for these people because they are in pain and even though these medications aren’t good for pain really, I don’t know what else to do for them.”</p>

	(37) “Where’s the support? Yeah, but where’s the multidisciplinary approach? There aren’t any community resources out there to help us.” (38)
<i>Lack of knowledge and evidence /education</i>	“There isn’t any patient support material. I just have the guidelines and I’m supposed to relay the information to them. And I’m relaying the information to a client that’s very resistant to change. I have to be like a pharmaceutical rep. I have to detail the patient. I have to get them to buy into the risk of the high doses. I don’t have any support material for that. I don’t have any evidence or graphs or charts to present to the patient to say, ‘Hey, if you’re on a Benzo and a narcotic, you’re at a higher risk of dying.’” (38) “...there had been no instruction whatsoever. I had no didactic training in pain management. Other than what you learn on the street. – Physician 2” (42)
<i>Lack of legislation and appropriate protocols and contracts</i>	“These are the rules. You know the rules. They’re not my rules. Uh, this is the law and we can both agree that, you know, and those situations really practice in a way that’s against the law. Hum, and so this makes it, it makes it more clear and objective and greatly reduces that kind of degree of emotional energy that was stressful prior to that. (34)
<i>Lack of time</i>	“In the community, [a family physician] might have a 5- or a 7- or 10- or 15-minute [appointment], and they totally have inadequate time to cover it. So, it can come up where you run out of time. – Physician 6” (42) “The biggest problem in the whole thing is lack of time. Typically these are complex people with multiple problems, and you really could spend the whole appointment, more than 1 whole appointment, just talking about this [opioid agreement]. I mean, we have all these reminders that we have to do, and all the scripts, and they’re wanting a podiatry consult, and an eye consult, and you need to really sit down and go through a person’s record, and really try to make a more rational decision. I take it very seriously. It’s serious business. What if you do create an opiate problem for somebody? Because you’re not being careful enough about it? (43)

2 **GPs caught in the middle of “the opioid crisis”**

1 *GP's duty to treat pain*

2 As healers, GPs desire to relieve patient's pain. (37, 38, 42) The subjective nature of pain
3 complicates this mandate. (37, 39) GPs interviewed by Desveaux et al, (37,38) and Goodwin
4 et al, (42) stated that before the opioid crisis, it was believed that chronic pain was often
5 undertreated. Some GPs found that analgesics other than opioids were seldom sufficient for
6 chronic pain. (37, 39) Some GPs considered the patient as an undoubtable expert of their pain
7 and considered it their job to address and eliminate pain. (37, 38) GPs from Desveaux et al,
8 (37) reported that patients expect chronic pain to reach to zero. A range of emotional and
9 psychosocial components contribute in maintaining chronic pain, making these expectations
10 unrealistic. (38, 42) These GPs pleaded for more public awareness and education among
11 patients regarding their pain. (37)

12 *GP's duty towards society at large*

13 Because of the well-known addictive character of opioids, some GPs reported
14 a stigma in prescribing opioids. (40, 41) While some felt that the negative
15 attention was unfair, others acknowledged the role that physicians have played in
16 contributing to the opioid crisis. (38) GPs emphasized and acknowledged their
17 gatekeeper role in fighting the opioid crisis. (34-47) However, because pain is
18 subjective, some GPs doubted their medical decisions and at times created feelings
19 of guilt that they might be undertreating their patients. (37, 39, 40) GPs felt caught
20 between the desire to effectively treat pain and the societal obligation to decrease
21 opioid prescriptions in order to reduce harm.

23 **Are opioids always bad?**

24 *Effectiveness and side-effects*

25 Several GPs stated that prescribing pain medication was based on a delicate balance between
26 effective pain relief and possible side-effects. (35, 36) In this matter, individualized
27 prescribing is essential especially in elderly and patients with comorbidities. (37, 41) When
28 restoring functional capacity and improving quality of life, GPs interviewed by Tong et al,
29 (47) reported that the benefits of opioids at times outweighed the risks in chronic pain
30 management. Several GPs' prescribing decisions were affected by possible side effects such

as falls, drowsiness, constipation or nausea. (41, 44, 45) A small subset of self-described “militant” GPs avoided opioid prescription in non-cancer patients due to limited indications and benefits. (37, 38) GPs interviewed by Esquibel et al, (40) agreed with this statement and claimed that opioids lack evidence for long-term effectiveness and ultimately cause unwanted side effects. However, some GPs considered weak- or short-acting opioids acceptable for chronic non-cancer pain. (39) GPs reported that the efficacy of weak or short-acting opioids differed largely. Some felt more comfortable prescribing short-acting instead of long-acting opioids because this gave them a sense of control. (38) Whilst others believed short-acting opioids increased the likelihood of break-through pain. (38, 42) GP’s experience regarding the effectiveness of several types of weak opioids also influenced their preference. (39, 41)

Addiction

Growing knowledge on the addictive nature of opioids has made physicians reluctant to prescribe them. (46) However, some GPs described addiction and misuse as a concern that should be dealt with, but should at the same time not be a barrier for prescribing opioids. (41, 46) GPs interviewed by Seamark et al, (46) considered tolerance and the possible requirement for more medication over the years when prescribing opioids. Some GPs believed long-acting opioids to have a higher likelihood for addictive potential and escalating doses. (38) Many GPs feared addiction in patients with a history of substance misuse or patients with an “abusive personality”. (38, 47)

Prescription depending on the nature of pain

Some GPs considered opioids justified in chronic pain, while others considered it solely for terminal or palliative care. (37, 38, 46, 47) GPs interviewed by Ekelin et al, expressed reluctance in prescribing opioids for psychosomatic illnesses. (39) Opioid prescription was viewed as an overtreatment of osteoarthritis by several GPs. (45)

GP’s weighing scale

GP-related factors

GP expertise plays a pivotal role in opioid prescription decision-making. A strong therapeutic relationship together with the number of years in practice made GPs feel more confident with their prescription decisions. (38) Previous experience with opioid prescription and opioid-specific training were also mentioned as facilitators to feel more confident in prescribing opioids. (41, 44, 46) GPs also reported increased confidence in opioid prescription decision-making when they had worked in addiction centres or treated patients in a palliative care setting. (38) Two studies showed that older and more experienced male doctors felt more confident in repeating weak opioid prescriptions. (39, 41) GPs who lacked experience in tapering off opioids, felt less confident to prescribe opioids. (41) Some GPs reportedly believed that refusing opioids or tapering off opioids would tempt patients to use illegal drugs instead. (39, 41) Some GPs with previous conflicts with patients regarding opioids avoided these analgesics “as a mechanism to avoid challenging conversations”. (38) Moreover, prevailing standards on opioids and prescription behaviour among co-workers influenced GPs’ prescription behaviour. (38, 41)

Patient-related factors

GPs reported patient age as an important factor in decision making. (46) Negative side-effects were considered more problematic in elderly patients than the potential for addiction. In contrast, GPs considered opioids as a last resort in young adults due to the potential for addiction. (46) Improving social relationships and housing conditions were considered more important aspects than prescribing stronger medications. (44) GPs interviewed by Seamark et al, (46) were reluctant to prescribe opioids in patients with a history of misuse or psychiatric illness. Some GPs expressed more confidence prescribing opioids for patients reluctant to receive opioid treatment compared to patients who demanded opioids because of fear of addiction. (38)

GP-patient relationship factors

Several GPs stated “knowing the patient” facilitates decision-making in prescribing opioids. (38) GPs declared that long-standing therapeutic relationships made it easier to decide whether or not to start opioids or to renew a prescription. GPs relied on patient’s pain presentation for opioid prescription. However, in case of opioid prescriptions patients might not always be the most trustworthy partner. (39) According to the GPs, the subjective nature of pain further enhanced the feeling of mistrust between the GPs and their patients. Some GPs

described using a gut feeling in deciding to prescribe opioids. (43) The potential loss of a doctor–patient relationship was a major concern for GPs when declining to prescribe opioids. (38) GPs worried that they would be perceived as lacking empathy if they refused to prescribe opioids. Nonetheless, they acknowledged their responsibility to consider dependence and addiction. Many GPs considered talking about opioid treatment with patients to be a major source of conflict. (38, 42,44) Some GPs even felt manipulated by their patients when discussing pain treatment. (38)

GP’s sense of powerlessness

Dumped on the GP

GPs reported that specialists are more likely to prescribe opioids and do not do their due diligence in addressing the opioid crisis. (38) They report feeling that the management of opioids is often “dumped on the GP”. (37, 38) GPs reported feeling uncomfortable in renewing opioids when they disagreed on the indication or if they did not receive a clear handover on when and how to taper off. (36, 42, 44, 47) Some GPs stood firm and refused renewal as they found it their responsibility to get their patients off of opioids. (44) Yet other GPs stated they sometimes prescribed renewals to avoid difficult conversations with their patients. (39, 42)

Lack of alternatives

GPs claimed to have a lack of alternatives when managing chronic pain, particularly in older patients. GPs reported that non-pharmacological options like regular physical activity, psychotherapy and physiotherapy were often rejected by patients. (44) GPs reported reasons for not referring to specialized pain centres or private specialists included long waitlists, lack of affordability, and likelihood that these referrals would end in opioid prescription anyhow as. (42,44) GPs interviewed by Desveaux et al, (38) wanted a more interdisciplinary approach for chronic pain management. GPs reported that an impaired kidney function and contraindications made other pharmacological options limited. (47)

Lack of knowledge and evidence /education

GPs considered conversations about opioids to be difficult and to create tension in the GP-patient relationship. (37,42) Some GPs wanted more patient support material to educate

1 patients about opioid treatment. In the absence of specialized training (i.e., chronic pain
2 management or addictions training) GPs felt less equipped to engage in conversations on
3 opioids, and were thus more likely to adhere to current opioid prescription guidelines. (38, 42)

4 5 *Lack of legislation and appropriate protocols and contracts*

6 Some GPs desired clear legislation to guide and justify their therapy. (34,42) Others
7 reportedly felt that current opioid protocols were too limited for use in practice and that there
8 was not enough focus on providing alternatives. (38) Some GPs stated that adhering to opioid
9 guidelines interfered with their duty as a “healer”. (38) GPs’ negative experiences with
10 protocols and guidelines reduced adherence. (38) Some GPs stated that a lack in appropriate
11 protocols in tapering dosage resulted in avoiding opioid prescription. (37) Several GPs did not
12 know how to follow the recommended opioid management guidelines (such as drug screening
13 and contracts) and stated to not use protocols as often as they should. (43)

14 *Lack of time*

15 GPs reported to be frustrated by a perceived lack of time with patients, particularly when
16 needing to justify to the patient the denial of an opioid prescription. (42, 46)

18 **Discussion**

19 *Principal findings*

20 In this systematic review, we identified four main themes on GP attitudes towards opioid pain
21 management: 1) GPs caught in the middle of “the opioid crisis”, 2) Are opioids always bad?,
22 3) GPs weighing scale and 4) GP’s sense of powerlessness. GP attitudes towards opioid
23 prescribing for non-cancer pain are subject to several GP-, patient- and
24 therapeutic relationship-related factors. The subjective nature of pain places GPs in a split
25 position of being a healer but also a gatekeeper in “the opioid crisis”. The ongoing “zero
26 tolerance” trend in experiencing pain has led to a more liberal approach in prescribing opioids
27 among some GPs. Some GPs consider opioids justified for (chronic) non-cancer pain
28 management if functional capacity and quality of life improve, while others find opioids to
29 have limited indication or benefit in these patients. GPs differed in age, experience, working
30 place and GP-patient relationship, which may have influenced their attitudes. GPs who lacked

1
2
3 1 experience in tapering off opioids felt less confident in opioid prescribing and were therefore
4 2 less likely to prescribe opioids. Opioid prescription behaviour among co-workers also
5 3 influenced prescription behaviours. Most GPs stated that “knowing the patient” facilitated
6 4 decision-making in prescribing opioids. The potential loss of a doctor–patient relationship
7 5 was a major concern for GPs when declining to prescribe opioids. GPs stated that current
8 6 guidelines are too general and do not properly address the problems they face in daily clinical
9 7 practice. Lack of support by specialists and access to multidisciplinary pain centres frustrated
10 8 GPs.
11
12 9

13 10 As demonstrated by our findings and related studies, (25, 26) the addictive nature of opioids is
14 11 widely recognized in primary care and is one of the factors that make GPs refrain from
15 12 prescribing opioids. Importantly, the ineffectiveness of opioids was not reported as a major
16 13 factor to GPs in determining their opioid prescription patterns. Even when the ineffectiveness
17 14 of opioids was recognized, GPs felt morally obliged to alleviate pain and still considered
18 15 opioids as a last resort in chronic pain. This reflects the lack of alternatives and knowledge on
19 16 how to effectively address chronic non-cancer pain. This review underscores the importance
20 17 of educating GPs on effective strategies in relieving chronic non-cancer pain, but also on
21 18 conversation techniques to engage in difficult conversations with patients about pain and pain
22 19 acceptance. That said, broadening GP knowledge alone will not be sufficient, raising
23 20 awareness among patients is also important. Patients should be well informed about the
24 21 impact of chronic pain and that a pain reduction to zero is often impossible. Patients have to
25 22 realize that opioids are not “the Holy Grail”. Developing patient support materials may help to
26 23 create awareness among patients. Improvement of the communication between GPs and
27 24 specialists is also much needed. As GPs, we recognize the powerlessness felt when after hours
28 25 of motivational talks, discussing the inappropriateness of opioid use with our patients, we
29 26 decide to refer them to a pain center for alternative pain treatment, which then results in
30 27 patients returning to our care with opioid prescriptions with no further explanation or
31 28 communication.
32 29

33 30 GPs in this review complained how current guidelines are too general and do not properly
34 31 address the problems they face in daily clinical practice. A recent Australian qualitative
35 32 review analyzed GP attitudes towards interventions aimed at reducing opioid prescriptions by
36 33 GPs and proposed that co-designing guidelines with end-users (GPs) might influence their
37 34 success. (49) Although previous publications (25,26) underline the importance of the

development of new guidelines, we believe that underlining the importance of GP's involvement in developing these guidelines is also much needed.

The included studies were conducted in six different countries, with different healthcare systems, but despite this, themes identified were broadly consistent. Although the themes and bottlenecks GPs face were similar, different healthcare systems may require other strategies to address their unique problems. We believe the above-mentioned recommendations such as educating GPs and patients, improving collaboration between GPs and specialists and developing guidelines for GPs by GPs will work across different healthcare systems. However, solutions should be adapted to fit local needs and demands. Encouraging country-specific changes at health insurance policy level should be part of local opioid reduction strategies. Recently, several Dutch universities (Radboud University in Nijmegen, Utrecht Medical Centre in Utrecht, Leiden Medical Centre in Leiden and the Erasmus Medical centre in Rotterdam), joined forces to decrease inappropriate opioid use in primary care. (50) Together they investigate the causes and consequences of opioid use in the Netherlands and also aim to influence policy level changes.

Strengths and limitations

A strength of our study is that GPs' perspectives on opioid treatment for non-cancer pain were synthesized by a review team of mainly GPs using a transparent and robust methodology to generate new and comprehensive themes reflecting data across different geographical settings. We acknowledge that our direct involvement in primary care might be a source of bias; however, we believe that our backgrounds enable a deeper level of understanding of this topic. This review has included eight studies (34, 37-39, 44, 45, 47) that were not included in the two most recent reviews on this topic. Five studies were excluded in this systematic review because these also included data on other primary care givers such as nurse practitioners or doctor's assistants and the data regarding GPs could not be separated. By excluding these studies, we are aware that we might have lost some potentially useful data. Not each study has equally contributed to the presented data. In Rosemann et al, (45) only one paragraph was dedicated to GPs attitudes towards opioid prescriptions. In Achkar et al, (34) only two GPs were included making the data extraction minimal. Moreover, a majority of the studies were performed in the USA making generalizability limited.

Conclusion

1
2
3 1 This review demonstrates the difficulties encountered by GPs in treating (chronic) non-cancer
4 2 pain and refraining from opioid prescription: a zero-tolerance policy towards pain by both
5 3 doctors and patients; a wish for strong doctor-patient relationships with a fear of difficult
6 4 conversations; a lack of knowledge and protocols on effective strategies to treat (chronic) pain
7 5 in primary care; a lack of time; and inadequate collaboration with, and guidance from,
8 6 specialists. Our findings highlight that in order to promote appropriate opioid prescription in
9 7 primary care and to reduce the harms associated with opioid misuse, future research is needed
10 8 to develop practical guidelines on appropriate opioid prescribing, tapering off opioid use and
11 9 adopting effective communication strategies not only for GPs but also fine-tuned by GPs.

10 **Author’s contribution**

11 RP and LK made substantial contribution to the conception and/or design of the work. RP,
12 LK, JR and AC contributed to the acquisition, analysis and interpretation of data for the work.
13 RP, LK, JR, AC, MV and BK provided input to drafting the work and/ or revising it critically
14 and gave final approval of the version to be published.

15 **Competing interests**

16 All authors declare that they have no competing interests.

17 **Funding**

18 All authors declare to have not received a specific grant for this research from any funding
19 agency in the public, commercial or non-profit sector.

20 **Data sharing statement**

21 Data are available upon reasonable request.

22 Figure 1. PRISMA Flowchart of article identification and selection
23

24 **Ethics approval:** ethical approval was not sought for the present study because this article is
25 a systematic review
26

27 **Literature**
28

1. De Conno F, Ripamonti C, Brunelli C. Opioid purchases and expenditure in nine western European countries: 'are we killing off morphine?'. *Palliat Med*. 2005;19(3):179-84. DOI: 10.1191/0269216305pm1002oa
2. Fischer B, Jones W, Rehm J. Trends and changes in prescription opioid analgesic dispensing in Canada 2005-2012: an update with a focus on recent interventions. *BMC Health Serv Res*. 2014;14:90. DOI: 10.1186/1472-6963-14-90
3. Kelly JP, Cook SF, Kaufman DW, Anderson T, Rosenberg L, Mitchell AA. Prevalence and characteristics of opioid use in the US adult population. *Pain*. 2008;138(3):507-13. DOI: 10.1016/j.pain.2008.01.027
4. The Royal Australian College of General Practitioners. Prescribing drugs of dependence in general practice. Part C1: Opioids. 2017; East Melbourne Victoria: RACGP.
5. Ashaye T, Hounsime N, Carnes D, Taylor SJC, Homer K, Eldridge S, et al. Opioid prescribing for chronic musculoskeletal pain in UK primary care: results from a cohort analysis of the COPERS trial. *BMJ Open*. 2018;8(6):e019491. DOI: 10.1136/bmjopen-2017-019491
6. Verhamme KMC. Are we facing an opioid crisis in Europe? *Lancet Public Health*. 2019;4(10)(e483-e484).
7. Weesie Y. Ook Nederlandse huisartsen schrijven vaker opioïden voor. *Huisarts en Wetenschap*. 2018;61(10)(10).
8. van Brakel. Verslag rondetafelconferentie VWS:gebruik opioïden. 2018.
9. Nivel. Available from: https://www.nivel.nl/sites/default/files/bestanden/Rapport_voorschrijven_opioiden.pdf
10. Jensen MK, Thomsen AB, Hojsted J. 10-year follow-up of chronic non-malignant pain patients: opioid use, health related quality of life and health care utilization. *Eur J Pain*. 2006;10(5):423-33. DOI: 10.1016/j.ejpain.2005.06.001
11. Tucker HR, Scaff K, McCloud T, Carlomagno K, Daly K, Garcia A, et al. Harms and benefits of opioids for management of non-surgical acute and chronic low back pain: a systematic review. *Br J Sports Med*. 2020;54(11):664. DOI: 10.1136/bjsports-2018-099805
12. Benyamin R, Trescot AM, Datta S, Buenaventura R, Adlaka R, Sehgal N, et al. Opioid complications and side effects. *Pain Physician*. 2008;11(2 Suppl):S105-20.
13. Up-to-date, pain control in the critically ill adult patient.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

14. Hauser W, Schug S, Furlan AD. The opioid epidemic and national guidelines for opioid therapy for chronic noncancer pain: a perspective from different continents. Pain Rep. 2017;2(3):e599. DOI: 10.1097/PR9.0000000000000599

15. Hancock S et al. The opioid crisis in the USA. Br Dent J. 2019 Jun;226(11):815. DOI: 10.1038/s41415-019-0420-6

16. Saha et al. Nonmedical Prescription Opioid Use and DSM-5 Nonmedical Prescription Opioid Use Disorder in the United States. J Clin Psychiatry. 2016 Jun;77(6):772-80. doi: 10.4088/JCP.15m10386.

17. Stichting Farmaceutische Kengetallen. 2020. Available from https://www.sfk.nl/publicaties/PW/2020/copy_of_scores-kwaliteitsindicatoren-ook-grafi-sch-weergegeven.

18. van Amsterdam J, van den Brink W. The Misuse of Prescription Opioids: A Threat for Europe? Curr Drug Abuse Rev. 2015;8(1):3-14. DOI: 10.2174/187447370801150611184218

19. Publications Office of the European Union. European Monitoring Centre for Drugs and Drug Addiction European drug report 2018: trends and developments. Luxembourg; 2018.

20. Dart RC, Severtson SG, Bucher-Bartelson B. Trends in opioid analgesic abuse and mortality in the United States. N Engl J Med. 2015;372(16):1573-4. DOI: 10.1056/NEJMc1501822

21. NICE guideline. Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain. Published: 07 April 2021.

22. Pharmatimes. Available from http://www.pharmatimes.com/web_exclusives/is_the_uk_facing_its_own_opioid_crisis_1315

23. UK Government. Available from <https://www.gov.uk/government/news/opioid-expert-working-group-meets-at-mhra>

24. Nederlandse Huisartsen Genootschap. 2018. NHG standaard pijn

25. Kennedy MC, Pallotti P, Dickinson R, Harley C. 'If you can't see a dilemma in this situation you should probably regard it as a warning': a metasynthesis and theoretical modelling of general practitioners' opioid prescription experiences in primary care. Br J Pain. 2019;13(3):159-76. DOI: 10.1177/2049463718804572

- 1 26. Toye F, Seers K, Barker KL. Meta-ethnography to understand healthcare
2 professionals' experience of treating adults with chronic non-malignant pain. *BMJ*
3 *Open*. 2017;7(12):e018411. DOI: 10.1136/bmjopen-2017-018411
- 4 27. Jaye et al. Doing qualitative research in general practice: methodological utility and
5 engagement. *Fam Pract*. 2002 Oct;19(5):557-62. doi: 10.1093/fampra/19.5.557
- 6 28. Burgers et al. Development of a research agenda for general practice based on
7 knowledge gaps identified in Dutch guidelines and input from 48 stakeholders, *Eur J*
8 *Gen Pract*. 2019 Jan;25(1):19-24. doi: 10.1080/13814788.2018.1532993
- 9 29. Tong A, Flemming K, McInnes E, Oliver S, Craig J. Enhancing transparency in
10 reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol*.
11 2012;12:181. DOI: 10.1186/1471-2288-12-181
- 12 30. Thomson Reuters. EndNote X7. 2014 Retrieved from [http://endnote.com/product-](http://endnote.com/product-details/x7)
13 [details/x7](http://endnote.com/product-details/x7).
- 14 31. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in
15 systematic reviews. *BMC Med Res Methodol*. 2008;8:45. DOI: 10.1186/1471-2288-8-
16 45
- 17 32. CASP Tool. Available from: <http://cfkr.dk/images/file/CASP%20instrumentet.pdf>.
- 18 33. Lewin S, Glenton C, Munthe-Kaas H, Carlsen B, Colvin CJ, Gulmezoglu M, et al.
19 Using qualitative evidence in decision making for health and social interventions: an
20 approach to assess confidence in findings from qualitative evidence syntheses
21 (GRADE-CERQual). *PLoS Med*. 2015;12(10):e1001895. DOI:
22 10.1371/journal.pmed.100189
- 23 34. Al Achkar M, Revere D, Dennis B, MacKie P, Gupta S, Grannis S. Exploring
24 perceptions and experiences of patients who have chronic pain as state prescription
25 opioid policies change: a qualitative study in Indiana. *BMJ Open*.
26 2017;7(11):e015083. DOI: 10.1136/bmjopen-2016-015083
- 27 35. Barry DT, Irwin KS, Jones ES, Becker WC, Tetrault JM, Sullivan LE, et al. Opioids,
28 chronic pain, and addiction in primary care. *J Pain*. 2010;11(12):1442-50. DOI:
29 10.1016/j.jpain.2010.04.002
- 30 36. Bergman AA, Matthias MS, Coffing JM, Krebs EE. Contrasting tensions between
31 patients and PCPs in chronic pain management: a qualitative study. *Pain Med*.
32 2013;14(11):1689-97. DOI: 10.1111/pme.12172

37. Desveaux L, Saragosa M, Kithulegoda N, Ivers NM. Family Physician Perceptions of Their Role in Managing the Opioid Crisis. *Ann Fam Med*. 2019;17(4):345-51. DOI: 10.1370/afm.2413
38. Desveaux L, Saragosa M, Kithulegoda N, Ivers NM. Understanding the behavioural determinants of opioid prescribing among family physicians: a qualitative study. *BMC Fam Pract*. 2019;20(1):59. DOI: 10.1186/s12875-019-0947-2
39. Ekelin E, Hansson A. The dilemma of repeat weak opioid prescriptions - experiences from swedish GPs. *Scand J Prim Health Care*. 2018;36(2):180-8. DOI: 10.1080/02813432.2018.1459241
40. Esquibel AY, Borkan J. Doctors and patients in pain: Conflict and collaboration in opioid prescription in primary care. *Pain*. 2014;155(12):2575-82. DOI: 10.1016/j.pain.2014.09.018
41. Gooberman-Hill R, Heathcote C, Reid CM, Horwood J, Beswick AD, Williams S, et al. Professional experience guides opioid prescribing for chronic joint pain in primary care. *Fam Pract*. 2011;28(1):102-9. DOI: 10.1093/fampra/cmz083
42. Goodwin J, Kirkland S. Barriers and facilitators encountered by family physicians prescribing opioids for chronic non-cancer pain: a qualitative study. *Health Promot Chronic Dis Prev Can*. 2021;41(6):182-9. DOI: 10.24095/hpcdp.41.6.03
43. Krebs EE, Bergman AA, Coffing JM, Campbell SR, Frankel RM, Matthias MS. Barriers to guideline-concordant opioid management in primary care--a qualitative study. *J Pain*. 2014;15(11):1148-55. DOI: 10.1016/j.jpain.2014.08.006
44. Prathivadi P, Barton C, Mazza D. Qualitative insights into the opioid prescribing practices of Australian GP. *Fam Pract*. 2020;37(3):412-7. DOI: 10.1093/fampra/cmz083
45. Rosemann T, Wensing M, Joest K, Backenstrass M, Mahler C, Szecsenyi J. Problems and needs for improving primary care of osteoarthritis patients: the views of patients, general practitioners and practice nurses. *BMC Musculoskelet Disord*. 2006;7:48. DOI: 10.1186/1471-2474-7-48
46. Seamark D, Seamark C, Greaves C, Blake S. GPs prescribing of strong opioid drugs for patients with chronic non-cancer pain: a qualitative study. *Br J Gen Pract*. 2013;63(617):e821-8. DOI: 10.3399/bjgp13X675403
47. Tong ST, Hochheimer CJ, Brooks EM, Sabo RT, Jiang V, Day T, et al. Chronic Opioid Prescribing in Primary Care: Factors and Perspectives. *Ann Fam Med*. 2019;17(3):200-6. DOI: 10.1370/afm.2357

- 1
2
3 1 48. Healthline. Available from [https://www.healthline.com/find-care/articles/primary-](https://www.healthline.com/find-care/articles/primary-care-doctors/what-is-a-primary-care-physician#types-of-pc-ps)
4 care-doctors/what-is-a-primary-care-physician#types-of-pc-ps
5 2
6 3 49. Prathivadi P, Lockett T, Barton C, Holliday S, Mazza D. General practitioner attitudes
7 towards systems-level opioid prescribing interventions: A pooled secondary
8 4
9 qualitative analysis. Aust J Gen Pract. 2021;50(5):309-16. DOI: 10.31128/AJGP-04-
10 5
11 20-5381
12 6
13 7 50. Erasmus MC. Available from [https://www.erasmusmc.nl/en/research/project/mis-](https://www.erasmusmc.nl/en/research/project/mis-opioids)
14 opioids
15 8
16
17 9

For peer review only

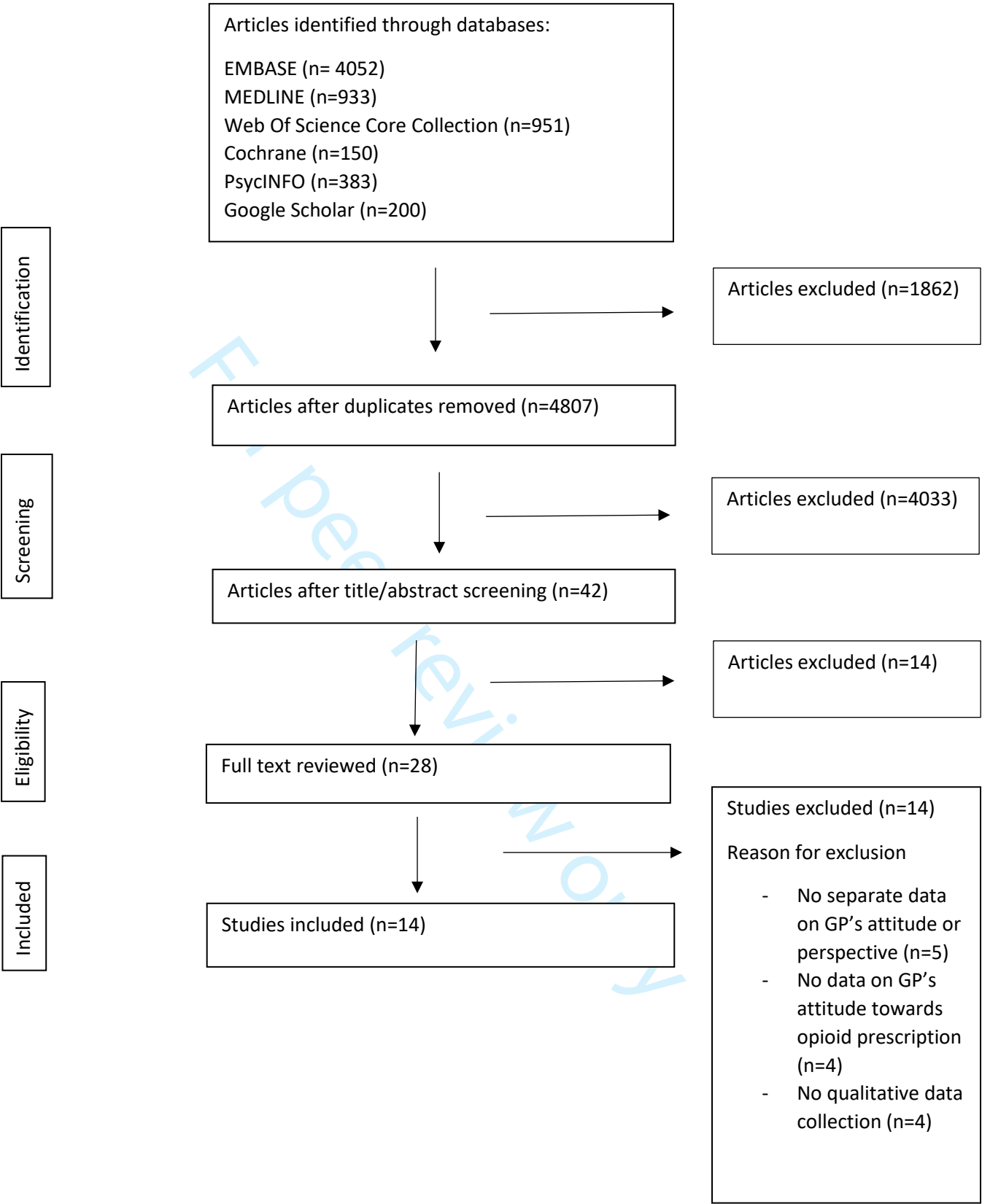


Figure 1. PRISMA Flowchart of article identification and selection

Supplementary Table S1. Overview of search terms used for each database

Database	Search term
EMBASE	<p>('opiate agonist'/de OR opiate/de OR 'analgesia'/de OR 'analgesic agent'/de OR 'narcotic analgesic agent'/de OR pain/dm_dt OR 'chronic pain'/dm_dt OR 'backache'/exp/dm_dt OR 'musculoskeletal pain'/dm_dt OR 'osteoarthritis'/exp/dm_dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*))) :Ab,ti) AND ('primary health care'/exp OR 'general practitioner'/exp OR 'general practice'/exp OR 'family medicine'/de OR (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ('health personnel attitude'/de OR 'physician attitude'/de OR 'prescription'/de OR perception/de OR attitude/de OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*))) :ab,ti) NOT ([animals]/lim NOT [humans]/lim) NOT ([conference abstract]/lim AND [1800-2017]/py)</p>

MEDLINE	(Analgesics, Opioid/ OR Analgesia/ OR Analgesics/ OR Pain/dt OR exp Back Pain/dt OR Musculoskeletal Pain/dt OR exp Osteoarthritis/dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR General Practice/ OR Family Practice/ OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Attitude of Health Personnel/ OR Prescriptions/ OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.) NOT (exp animals/ NOT humans/)
---------	--

Web of Science Core Collection	TS=(((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/2 (relief* OR prescri* OR drug* OR agent* OR medication*)))) AND (((primary) NEAR/2 (care OR healthcare)) OR (general NEAR/2 (practitioner* OR practice*)) OR (family NEAR/2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/2 (prescription* OR prescrib*)))) AND DT=(article)
---	--

Supplementary table S2. Themes and subthemes	
Theme	Subthemes
GPs caught in the middle of the opioid crisis	<ul style="list-style-type: none">• GP’s duty to treat pain• GP’s duty towards society at large
Are opioids always bad?	<ul style="list-style-type: none">• Effectivity and side effects• addiction• Nature of pain
GPs weighting scale to decide on opioids	<ul style="list-style-type: none">• GP factors• Patient factors• GP-patient relationship factors
GP’s sense of powerlessness	<ul style="list-style-type: none">• Dumped on the GP• Lack of alternatives• Lack of knowledge and evidence /education• Lack of legislation and appropriate protocols and contracts

Supplementary material

original protocol for the study

General practitioners' attitude towards opioids in non cancer pain management, a qualitative systematic review and thematic analysis

R. (Rani) V. G. Punwasi, L. (Loes) de Kleijn, B.W. (Bart) Koes, J.B.M. (Hanneke) Rijkels-Otters, A. (Alessandro) Chiarotto, M. (Mario) Veen

To enable PROSPERO to focus on COVID-19 registrations during the 2020 pandemic, this registration record was automatically published exactly as submitted. The PROSPERO team has not checked eligibility.

Citation

R. (Rani) V. G. Punwasi, L. (Loes) de Kleijn, B.W. (Bart) Koes, J.B.M. (Hanneke) Rijkels-Otters, A. (Alessandro) Chiarotto, M. (Mario) Veen. General practitioners' attitude towards opioids in non cancer pain management, a qualitative systematic review and thematic analysis. PROSPERO 2020 CRD42020194561 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020194561

Review question

What is the attitude of general practitioners towards opioid treatment for non cancer pain?

Searches

The following databases will be searched from their inception date up to the 23th of June 2020; Embase, MEDLINE, Web of Science Core Collection, Cochrane, PsycINFO, CINAHL and Google Scholar. Only publications in English or Dutch are considered eligible. The searches in the various databases will be re-run prior to the manuscript submission if more than one year passed by from the date of initial search. Backward citation tracking of eligible articles will be performed.

Types of study to be included

Studies will be included when they use qualitative methods for data collection and analysis. Studies will be excluded if qualitative methods were not applied. Studies that collect data from quantitative surveys will also be excluded. Mixed-methods studies will be included if the qualitative data is reported separately. Only published studies and studies for which full text article is available will be included. All studies are written in English or in Dutch.

To summarize the following in- and exclusion criteria will be asserted:

Inclusion criteria

- 1. The study uses a qualitative methods for data collection
- 2. The study uses mixed-method and qualitative data are reported separately
- 3. The study is published and available as a full-text article.
- 4. The study is written in English or Dutch.

Exclusion criteria:

- 1. The study uses quantitative methods only
- 2. The study uses mixed method data where the qualitative data cannot be separated
- 3. The study uses data from quantitative surveys

Condition or domain being studied

Attitude/perspective, opioids prescription, general practitioners

In this study the attitude, notions, beliefs and perspectives of general practitioners on opioid treatment for non cancer pain will be examined. The aim of this systematic research of qualitative studies is to shed light on general practitioners' perceptions of when or why they incorporate opioids in their non cancer pain management, but also for whom they prescribe opioids and to explain potential barriers or facilitators for prescribing it.

Participants/population

This study will include all available studies that meet the inclusion criteria that are mentioned in sections 19 to 23. Studies are excluded if they meet the exclusion criteria.

All included studies are studies performed on general practitioners (synonym: family doctors, primary care medical doctors). Studies are included if they are performed in a primary care or outpatient clinical setting and excluded if the study population consist of medical doctors working in a clinical setting. Studies examining general practitioners as well as other medical doctors or other health professionals will only be included if results regarding general practitioners are reported separately.

To summarize the following in- and exclusion criteria will be asserted:

Inclusion criteria:

- 1. The study includes general practitioners (synonym: family doctors, primary care medical doctors)
- 2. The study includes the attitude or perspective towards opioids
- 3. The study includes non cancer pain
- 4. The study is performed in primary care or outpatient clinical setting

Exclusion criteria:

- 1. The study population consists of a mixed group of health professionals without separation of results.
- 2. The study is performed in a clinical setting

Intervention(s), exposure(s)

Studies will be included if they examine general practitioners' view, perspective, notion and/or belief of opioid treatment in non cancer pain. Studies will be excluded if they examine views on opioid abuse, opioid withdrawal or opioid tapering. Studies reporting on opioid treatment for cancer pain treatment and/or palliative care pain treatment will be included if data on non cancer pain is reported separately.

Inclusion criteria:

1. The study examines general practitioners' views regarding opioid treatment for non cancer pain.

Exclusion criteria:

1. The study includes general practitioners' attitude towards opioid addiction, opioid dependence, opioid abuse or opioid tapering.

2. The study includes opioid treatment for cancer or palliative care pain management only or does not separate data regarding opioid treatment for non cancer pain

Comparator(s)/control

Not applicable

Context

No further information, all in- and exclusion criteria are mentioned in paragraphs above.

Main outcome(s)

General practitioners' views on opioid treatment for non cancer pain. Views can be derived through transcripts of focus group discussions, transcripts of interviews, answered question lists or through primary citations in study results e.t.c..

Measures of effect

Not applicable

Additional outcome(s)

Not applicable

Measures of effect

Not applicable

Data extraction (selection and coding)

Data selection

The electronic databases Cochrane, Embase, MEDLINE, Web of Science Core Collection, PsycINFO, CINAHL and Google Scholar were searched for eligible articles. All articles yielded were exported into Endnote, and duplicates were removed. All remaining articles were reviewed on title and abstract by two reviewers (RP and LK) independently. In case the title and abstract proved to be insufficient to evaluate eligibility, they were judged on full text. All remaining articles will be read in full text and assessed on inclusion and exclusion criteria by both reviewers (RP and LK) independently. The included articles of both reviewers will be compared and discussed. To assure maximum retrieval manual searching of the reference lists and citation tracking of papers identified as potentially relevant at this stage will also be performed. If disagreement between reviewers occurs, a consensus method will be implemented. Nonetheless if discussion between reviewers remains, a third independent reviewer (AC) will be consulted

Data extraction and coding

Two reviewers (RP and LK) will independently extract the available data of included studies through a standardized extraction form into spreadsheets in Microsoft Excel. The following characteristics of studies and their finding will be extracted: author/year, title, study location and setting, study population, research aim and/or question, data collection and analysis method, key themes and author conclusions. Studies that included a mix of participants only data that can be attributed to general practitioners will be extracted. In studies that used both a qualitative and quantitative approach, only qualitative components will be extracted. The extraction forms of both reviewers will be compared and merged by consensus. Nonetheless, if disagreement regarding data extraction prevails a third reviewer (AC) will be consulted.

Risk of bias (quality) assessment

A quality assessment is done to test the trustworthiness of included studies by assessing the thoroughness of the study, appropriateness of conduct and credibility of data. Although quality assessment in quantitative research is a well-known tool for further in and excluding studies on the basis of their quality and/or bias, such tools are argued to be inappropriate for assessing qualitative studies. (1) Nonetheless, plenty of such tools for qualitative research are developed, not to include or exclude but to differentiate and filter the varying strengths of studies which can further be used to determine each studies impact on results. For this reason the methodological quality of included studies in this review will be assessed independently by two reviewers (RP and LK) using The Critical Appraisal Skills Programme (CASP) checklist. The 10-item CASP tool was considered to be the most suitable tool to consider the quality parameters and is a well-validated and accepted tool. (2) A consensus meeting will be held to discuss all completed checklist resulting in a merged and summarized CASP form per included study. In case of disagreement, a third independent reviewer (AC) will be consulted. For each included study a summarized CASP report will be provided in the review. Since the CASP checklist does not provide for a score and is merely used to filter all included studies, studies will not be excluded on the basis of this assessment. However the CASP checklists will provide for a thorough view on studies' weaknesses of which the impact on data synthesis will be evaluated in the result and discussion.

1. Noyes J, Hannes K, Booth A, et al. Chapter 20: qualitative research and Cochrane reviews. In: Higgins J, Green S, eds. Cochrane handbook for systematic reviews of interventions version 530 (updated October 2015). The Cochrane Collaboration, 2015:1–26
2. <http://cfkr.dk/images/file/CASP%20instrumentet.pdf>

Strategy for data synthesis

A thematic approach as described by Thomas et al, (3) will be used to synthesise findings from the primary studies. Firstly, line by line text (including participants quotation and findings of the original authors) will be extracted and coded within an Excel sheet. This step will be done by at least two reviewers (RP and LK) independently. In the second stage, descriptive themes will be developed by reviewer (RP) by looking for similarities and differences between the codes. These descriptive themes will be recorded and stored within an Excel spreadsheet and cross checked by a second reviewer (LK). Afterwards, at least two reviewers will re-examine these descriptive themes through in depth discussions based on consensus in order to generate in-depth conceptual analytical theme. In case of disagreement between the reviewers, another reviewer will be consulted.

3. Thomas J, Harden A. Methods for thematic synthesis of qualitative research in systematic reviews. BMC Med Res Methodol 2008;8:45-59.

Analysis of subgroups or subsets

Not applicable

Contact details for further information

R.V.G. Punwasi, MD, General Practitioner trainee
r.punwasi@erasmusmc.nl

Organisational affiliation of the review

Department of general practice, Erasmus University Medical Center Rotterdam, The Netherlands.

Review team members and their organisational affiliations

R. (Rani) V. G. Punwasi. Department of general practice Erasmus University Medical Center Rotterdam
Dr L. (Loes) de Kleijn. Department of general practice Erasmus University Medical Center Rotterdam
Professor B.W. (Bart) Koes. Department of general practice Erasmus University Medical Center Rotterdam
Dr J.B.M. (Hanneke) Rijkels-Otters. Department of general practice Erasmus University Medical Center Rotterdam
Dr A. (Alessandro) Chiarotto. Department of general practice Erasmus University Medical Center Rotterdam

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Dr M. (Mario) Veen. Department of general practice Erasmus University Medical Center Rotterdam

Type and method of review

Systematic review, Other

Anticipated or actual start date

28 June 2020

Anticipated completion date

31 October 2020

Funding sources/sponsors

No funding received for this review.

Conflicts of interest

Language

English

Country

Netherlands

Stage of review

Review Ongoing

Details of final report/publication(s) or preprints if available

Not applicable.

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

MeSH headings have not been applied to this record

Date of registration in PROSPERO

27 July 2020

Date of first submission

26 June 2020

Details of any existing review of the same topic by the same authors

There are no existing reviews on this topic by the same authors.

Stage of review at time of this submission

Stage	Started
Preliminary searches	Yes
Piloting of the study selection process	No
Formal screening of search results against eligibility criteria	No
Data extraction	No
Risk of bias (quality) assessment	No
Data analysis	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

27 July 2020

Supplementary Table S1

Supplementary Table S1 Overview of search terms used for each database	
Database	Search term
EMBASE	('opiate agonist'/de OR opiate/de OR 'analgesia'/de OR 'analgesic agent'/de OR 'narcotic analgesic agent'/de OR pain/dm_dt OR 'chronic pain'/dm_dt OR 'backache'/exp/dm_dt OR 'musculoskeletal pain'/dm_dt OR 'osteoarthritis'/exp/dm_dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*))) :Ab,ti) AND ('primary health care'/exp OR 'general practitioner'/exp OR 'general practice'/exp OR 'family medicine'/de OR (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ('health personnel attitude'/de OR 'physician attitude'/de OR 'prescription'/de OR perception/de OR attitude/de OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*))) :ab,ti) NOT ([animals]/lim NOT [humans]/lim) NOT ([conference abstract]/lim AND [1800-2017]/py)

MEDLINE	(Analgesics, Opioid/ OR Analgesia/ OR Analgesics/ OR Pain/dt OR exp Back Pain/dt OR Musculoskeletal Pain/dt OR exp Osteoarthritis/dt OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR General Practice/ OR Family Practice/ OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Attitude of Health Personnel/ OR Prescriptions/ OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.) NOT (exp animals/ NOT humans/)
---------	--

Web of Science Core Collecion	TS=(((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/2 (relief* OR prescri* OR drug* OR agent* OR medication*)))) AND (((primary) NEAR/2 (care OR healthcare)) OR (general NEAR/2 (practitioner* OR practice*)) OR (family NEAR/2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/2 (prescription* OR prescrib*)))) AND DT=(article)
-------------------------------	--

Cochrane	<p>((opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) NEAR/3 (relief* OR prescri* OR drug* OR agent* OR medication*))) :Ab,ti) AND (((primary) NEAR/3 (care OR healthcare)) OR (general NEAR/3 (practitioner* OR practice*)) OR (family NEAR/3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps):ab,ti) AND ((attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) NEAR/3 (prescription* OR prescrib*))) :ab,ti)</p>
CINAHL	<p>(MH Analgesics, Opioid OR MH Analgesia OR MH Analgesics OR TI(opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) N2 (relief* OR prescri* OR drug* OR agent* OR medication*))) OR AB(opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) N2 (relief* OR prescri* OR drug* OR agent* OR medication*))) AND (MH Primary Health Care OR MH Physicians, Family OR MH Family Practice OR TI(((primary) N2 (care OR healthcare)) OR (general N2 (practitioner* OR practice*)) OR (family N2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps) OR AB(((primary) N2 (care OR healthcare)) OR (general N2 (practitioner* OR practice*)) OR (family N2 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps)) AND (MH Attitude of Health Personnel OR MH Prescriptions, Drug OR MH Perception OR TI(attitude*</p>

	OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) N2 (prescription* OR prescrib*)) OR AB(attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) N2 (prescription* OR prescrib*))) NOT (MH animals+ NOT MH humans+)
PsychInfo Ovid	(Opiates / OR Analgesia/ OR Analgesic Drugs / OR (opiate* OR opioid* OR analgesi* OR ((pain OR osteoarthritis*) ADJ3 (relief* OR prescri* OR drug* OR agent* OR medication*))).ab,ti.) AND (Primary Health Care/ OR General Practitioners/ OR Family Physicians / OR (((primary) ADJ3 (care OR healthcare)) OR (general ADJ3 (practitioner* OR practice*)) OR (family ADJ3 (doctor* OR physician* OR practice* OR medicine*)) OR gp OR gps).ab,ti.) AND (Health Personnel Attitudes / OR Prescription Drugs / OR Perception/ OR (attitude* OR perspective* OR perception* OR belief* OR ((behavior* OR behaviour* OR decision*) ADJ3 (prescription* OR prescrib*))).ab,ti.)
Google Scholar	opiate opioids analgesics "pain relief medication" "primary family general care health healthcare practitioner practice doctor physician practice medicine" attitude perception belief behavior behaviour decision prescription prescribing

Supplementary table S2	
Theme	Subthemes
GPs caught in the middle of the opioid crisis	<ul style="list-style-type: none"> • GP's duty to treat pain • GP's duty towards society at large
Are opioids always bad?	<ul style="list-style-type: none"> • Effectivity and side effects • addiction • Nature of pain
GPs weighting scale to decide on opioids	<ul style="list-style-type: none"> • GP factors • Patient factors • GP-patient relationship factors
GP's sense of powerlessness	<ul style="list-style-type: none"> • Dumped on the GP • Lack of alternatives • Lack of knowledge and evidence /education • Lack of legislation and appropriate protocols and contracts



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1 st page (title)
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Please find checklist below
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 4-6
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 4-6
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supplementary table S1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4-6
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 4-6
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 4-6
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 4-6
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4-6
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not applicable
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 4-6
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Not applicable
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Not applicable
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Not applicable
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not applicable
Reporting bias assessment	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not applicable
	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Not applicable

136/bmjopen-2021-054945 on 1 February 2022. Downloaded from <http://bmjopen.bmj.com/> on April 3, 2024 by guest. Protected by copyright.



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Not applicable
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	See figure 1 + page 6
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	See figure 1
Study characteristics	17	Cite each included study and present its characteristics.	See table 1
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	See table 2
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Not applicable
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	See table 3 + page 7-16
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	See table 3 + page 7-16
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	See table 3 + page 7-16
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	See table 3 + page 7-16
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	See table 3 + page 7-16
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not applicable
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	See page 16-18
	23b	Discuss any limitations of the evidence included in the review.	See page 18
	23c	Discuss any limitations of the review processes used.	See page 18
	23d	Discuss implications of the results for practice, policy, and future research.	See page 18
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	See page 3 + supplementary file
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	See page 3
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not applicable
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Not applicable



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Competing interests	26	Declare any competing interests of review authors.	Not applicable
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	See table 1, selected lines and quotations from each individual study may be requested from corresponding author

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

Section and Topic	Item #	Checklist item	Reported (Yes/No)
TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	yes
Synthesis of results	6	Specify the methods used to present and synthesise results.	yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing	yes



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Reported (Yes/No)
		groups, indicate the direction of the effect (i.e. which group is favoured).	
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	no
Interpretation	10	Provide a general interpretation of the results and important implications.	yes
OTHER			
Funding	11	Specify the primary source of funding for the review.	No
Registration	12	Provide the register name and registration number.	yes

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>