EUROPEAN MASTER IN HEALTH ECONOMICS AND MANAGEMENT

Population health management

Between relief and resistance: a qualitative study on the role of medical cannabis for chronic pain patients in Norway

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DECLARATION IN LIEU OF OATH

I hereby declare, under oath, that this master thesis has been my independent work and has not been aided with any prohibited means. I declare, to the best of my knowledge and belief, that all passages taken from published and unpublished sources or documents have been reproduced whether as original, slightly changed or in thought, have been mentioned as such at the corresponding places of the thesis, by citation, where the extent of the original quotes is indicated. The paper has not been submitted for evaluation to another examination authority or has been published in this form or another.

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Abstract

Background: Chronic pain affects many individuals in Norway and impacts different aspects of life, including physical functioning, emotional well-being, and social life. Conventional pain treatments often include opioids and NSAIDs, but they can be ineffective and cause difficult side effects. For some patients, medical cannabis offers an alternative, but access remains restricted.

Research question: What are the facilitators and barriers experienced by chronic pain patients and doctors in Norway regarding the use of medical cannabis as a self-management tool?

Theoretical framework: This study is based on the Chronic Care Model by Wagner et al. (2005), which highlights the importance of self-management support, and respect for patient preferences. The model provides a useful framework for understanding how medical cannabis fits into chronic pain management, particularly in a healthcare system where access is highly restrictive.

Research methods: A qualitative study was conducted using semi-structured interviews with six chronic pain patients and six doctors in Norway. Participants were selected through purposive sampling. The data was analysed thematically using a reflexive approach, focusing on experiences, barriers, and facilitators in using or prescribing medical cannabis for chronic pain.

Results: Patients described a range of access strategies, including legal prescriptions, travel abroad, and the illegal market. Many reported notable improvements in pain, sleep, quality of life, and daily functioning. However, barriers included financial burdens, loss of social networks, legal consequences, and stigma. Doctors expressed limited knowledge, lack of clinical guidelines, and hesitation to prescribe due to reputational risks, but most acknowledged the potential benefits of medical cannabis, particularly when conventional treatments fail.

Discussion and conclusion: There is a mismatch between patient needs and the current healthcare structure. Despite its potential, medical cannabis remains challenging to access in Norway. Addressing stigma, improving provider education, and creating clinical guidelines could support safer, and more consistent care. The findings stress the need for patient-centred care that includes alternative options and supports self-management in chronic pain care.

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1. Background

Chronic pain is one of the most prevalent health issues in Norway, affecting approximately one-third of the population. It significantly impacts individuals' quality of life, daily functioning, and overall well-being (Steingrimsdottir et al. 2023). Chronic pain is defined as pain that lasts longer than three months (NHS Scotland, 2025), but it is often more complex than this. It is not simply about physical discomfort, it may also impact psychological aspects, such as anxiety, depression, and sleep disturbances, as well as social relationships, work and their identity. The experience of chronic pain often becomes an invisible struggle, that is difficult to voice and may be dismissed or misunderstood by others. Additionally, chronic pain poses a burden on the healthcare system, as it may contribute to long-term disability and increased healthcare costs (Phillips, 2009).

This thesis explores the role of medical cannabis as a pain management strategy for chronic pain in Norway, based on interviews with both chronic pain patients and doctors. Although medical cannabis is legal in Norway under certain conditions (Direktoratet for Medisinske Produkter, 2023b), it remains a controversial and often misunderstood form of treatment. By exploring how medical cannabis is perceived, used, accessed and regulated in the Norwegian healthcare system, this study aims to shed light on why medical cannabis continues to be a questioned medicine.

1.1 Conventional pain management and its limitations

Conventional pain management strategies include pharmaceuticals such as opioids and non-steroidal anti-inflammatory drugs (NSAIDs). However, these pharmaceuticals often come with side effects, and varies in effectiveness, especially in long-term use (Norsk legemiddelhåndbok, 2023). Especially opioids, have been associated with dependency and overdose risks, raising concerns about the long-term use of these medications (Helsedirektoratet, 2024). NSAIDs, are usually used for inflammatory pain, but may cause gastrointestinal and cardiovascular complications, especially when used over long time periods (Norsk legemiddelhåndbok, 2021). As a result of this, alternative pain management approaches, including medical cannabis, have gained increased attention in recent years. While countries such as Denmark has integrated medical

cannabis into their pain management programs (Indenrigs- og sundhedsministeriet, 2024b), Norway maintains a restrictive regulatory environment, limiting patient access to this potential treatment option.

1.2 Medical cannabis as an alternative treatment

Medical cannabis has gained recognition for its therapeutic potential following the United Nations (UN) 2020 reclassification of cannabis, based on recommendations from the World Health Organisation (WHO) (World Health Organization, 2020). The cannabis plant contains over 100 cannabinoids, with delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) being the most studied. THC has pain-relieving and anti-nausea effects, but also produces intoxicating effects, while CBD is linked to anti-inflammatory and pain management effects (Kvam, 2018). These compounds interact with the endocannabinoid system, which regulates pain, inflammation, and neurological functions (Lu & Mackie, 2016).

Studies suggest that medical cannabis may provide pain relief, particularly for neurological pain, multiple sclerosis spasticity, and chemotherapy-induces nausea (National Academies of Sciences, Engineering, and Medicine, 2017). Research has also linked medical cannabis use to reduced opioid dependence and improved quality of life for chronic pain patients (Lucas et al., 2021). However, medical cannabis is associated with short-term side effects such as dizziness, nausea, and confusion, while long-term effects remain less known due to limited research (European Monitoring Centre for Drugs and Drug Addiction, 2018). More studies are needed to fully assess its risks and benefits in chronic pain management.

1.3 The need for research on medical cannabis in Norway

The discussion surrounding medical cannabis has increased, driven by patient advocacy groups, emerging scientific evidence, and changing policies in other countries. However, Norwegian research on medical cannabis and chronic pain remains limited. Understanding the perspective of Norwegian chronic pain patients and healthcare providers is crucial, particularly within the

framework of patient-cantered care, which emphasizes treatment approaches tailored to individual needs (Epstein et al., 2011).

1.4 Structure of the thesis

The thesis aims to examine the experiences and perceptions of chronic pain patients and doctors regarding the use of medical cannabis as a self-management support tool in Norway. The central research question is: "What are the facilitators and barriers experienced by chronic pain patients and doctors in Norway regarding the use of medical cannabis as a self-management tool?" To address this question, the study explores the lived experiences of chronic pain patients using medical cannabis, doctors' perspectives on prescribing and managing medical cannabis for chronic pain, and the challenges influencing the adoption of medical cannabis in Norway.

The following chapter introduces the theoretical framework providing a comprehensive review of existing literature on chronic pain management, the role of medical cannabis, and the Chronic Care Model which is used to guide the analysis of the study, especially focusing on self-management support (Wagner et al., 2005). Chapter three details the research methodology, outlining the qualitative approach used for the data collection, the sampling strategy, as well as the scope of the study. Chapter four presents the key findings from the interviews with chronic pain patients and doctors, analysed in relation to the research question. Following is the discussion chapter which interprets the findings within the broader literature, considering the implications for healthcare practice and policy. Finally, chapter six concludes the thesis by summarising the key insights.

1.5 Significance of the study

By investigating the potential role of medical cannabis in chronic pain management, this study contributes to the ongoing discussion of patient-centred care, and alternative pain management strategies. Understanding the perspectives of both patients and healthcare providers is essential for gaining insights into the role of medical cannabis in Norway.

The insights gained through this study may help inform policymakers, healthcare providers, and patients in navigating the evolving landscape of chronic pain management in Norway. This is particularly important as the access to medical cannabis remains highly restricted in Norway, despite growing evidence supporting the therapeutic use of cannabis for certain conditions (National Academies of Sciences, Engineering, and Medicine, 2017). The study may also contribute to discussions about balancing regulatory control with patient needs, addressing concerns about safety, efficacy, and appropriate prescribing practices.

Furthermore, the findings from this study may have broader implications for chronic pain management strategies in Norway. This could particularly include the promotion of patient autonomy and self-management support. By examining the experiences of chronic pain patients who have used or is currently using medical cannabis, this study highlights the gaps in existing treatment options and explore how alternative treatments may be integrated into conventional care. Additionally, by analysing the perspectives of healthcare providers, the study may provide insights into clinical hesitations, knowledge gaps, and potential areas for professional training regarding the use of medical cannabis. Ultimately, this study aims to contribute to an evidence-based discussion that may guide future policy decisions, improve patient access to safe and regulated treatment options, and enhance the overall quality of care for chronic pain patients in Norway.

2. Theoretical framework

The theoretical framework of this research is based on a wide range of existing research and studies, focusing on the use of medical cannabis in chronic pain management. This chapter begins by clarifying the distinction between medical and recreational cannabis, before exploring the cannabis-derived compounds delta-9-tetrahydrocannabinol and cannabidiol. Following this, the chapter examines clinical evidence on the effects of medical cannabis, discussing both its potential benefits and risks. Additionally, the legal status of medical cannabis in Norway is outlined. An explanation of the Chronic Care Model and its components is provided, as it serves as the base for this study.

2.1 What is medical cannabis

In 2020 the United Nations (UN) commission on Narcotic Drugs reclassified cannabis and cannabis resin to acknowledge its medical value, following recommendations from the World Health Organisation's (WHO) Expert Committee on Drug Dependence (ECDD) (World Health Organization, 2020). The WHO's 2018 review found that certain cannabis-based medicines, such as cannabidiol, have significant health benefits without abuse potential (World Health Organization, 2020). It is important to distinguish between medical cannabis and recreational cannabis, as medical cannabis is the focus of this research. In this thesis the term medical cannabis will refer to all cannabis-based products prescribed for medical use.

The cannabis plant contains over 100 different cannabinoids, but the two cannabis-derived compounds most studied and primarily used in medical cannabis are delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). THC is known for its pain-relieving properties, muscle-control support, anti-nausea effects and appetite stimulation. It is also the component of the cannabis plant that produces an intoxicating feeling. CBD on the other hand, has shown potential in reducing inflammation and pain management while also demonstrating therapeutic benefits for mental health disorders and addiction (Kvam, 2018).

The human body naturally produces cannabinoids, which are integral to the functioning of the endocannabinoid system. This system plays a crucial role in maintaining balance within the human body. Endocannabinoids, the bodies naturally occurring cannabinoids, help to regulate several physiological processes, including pain perception, inflammation, mood and neurological functions. The endocannabinoid system also aids in the body's response to stress, illness and injury, ensuring optimal function and stability across physiological systems (Lu & Mackie, 2016).

2.2 The effects of medical cannabis on chronic pain

Medical cannabis has demonstrated varying effects on patients, depending on the condition being treated. A systematic review and meta-analysis conducted by Whiting et al. (2015) suggest that medical cannabis can provide significant pain relief for some patients, especially those who do not respond well to conventional treatments such as opioids (Whithing et al., 2015). The National

Academies of Sciences, Engineering and Medicine published in 2017 a report reviewing the available studies about the health effects of medical cannabis. The report included studies looking into the effect of medical cannabis on different diseases and illnesses, identifying chronic pain patients as one of the groups experiencing the most significant effects, along with multiple sclerosis spasticity patients, and chemotherapy patients (National Academies of Sciences, Engineering, and Medicine, 2017). A study from 2025, investigated the pain-relieving effects of medical cannabis versus other prescription medication treatments, concluding that medical cannabis was comparatively more effective. The study found that 40% of the participants achieved a mean probability of response of 60% at three months, and the response was sustained after 6 months. The response was based on improvements in pain and functioning that were clinically meaningful (Wasan et al., 2025).

Further supporting these findings, a 2021 study conducted on Canadian medical cannabis patients, investigated the documented effects medical cannabis has on the patient's opioid use and quality of life. The study found that medical cannabis can reduce the use of opioids, providing an alternative for patients struggling with opioid dependency or inadequate pain management (Lucas et al., 2021). Similarly, Bachhuber et al. (2014) explored the relationship between medical cannabis laws and opioid overdose mortalities, finding that US states with medical cannabis laws had a reduction of 25% opioid death rates, suggesting a potential harm-reduction role for medical cannabis in opioid related deaths. However, more research is needed to confirm these findings (Bachhuber et al. 2014).

Overall, while medical cannabis is not a one-fits-all solution, it has shown promising potential in managing chronic pain, particularly neuropathic pain and multiple sclerosis (Lee et al., 2018). It has not only shown potential pain-relieving effects, but also improvements in quality of life. Safakish et al. conducted a study evaluating the effects of medical cannabis on chronic pain patients. It showed significant improvements in the SF-12 physical and mental health domains. Significantly decreasing headaches, fatigue, nausea and anxiety (Safakish, et al., 2020). However, its effectiveness varies depending on the individual and condition being treated.

While medical cannabis offers potential therapeutic benefits, it is also associated with various health risks that must be carefully considered. Short-term adverse effects reported in clinical trials are generally mild to moderate and comparable to the adverse effects of other commonly used medications. The short-term effects include dizziness, disorientation, dry mouth, nausea and confusion, with more serious effects such as paranoia and symptoms of psychosis being rare (European Monitoring Centre for Drugs and Drug Addiction, 2018).

However, long-term effects of medical cannabis use are less documented due to a lack of longitudinal research. Available studies suggest that adverse events tend to be like the short-term effects, with fatigue, dizziness and headaches being the most frequently reported symptoms (Hall, 2018). Potential concerns associated with long-term use include dependency, cognitive impairments, and cardiovascular risks, though more research is needed to determine the applicability of these concerns (European Monitoring Centre for Drugs and Drug Addiction, 2018).

Moreover, the method of administration plays a part in the mitigation of certain risks, as oral consumption or vaporizing may reduce respiratory complications compared to smoking (European Monitoring Centre for Drugs and Drug Addiction, 2018). While current evidence suggest that medical cannabis is generally a well-tolerated medicine, additional longitudinal studies are necessary to fully understand the long-term effects in chronic conditions. The lack of such studies may contribute to the reluctance some individuals feel toward medical cannabis use.

2.3 The status of medical cannabis in Norway

The Norwegian Directorate of Health and the Directorate for Medical Products acknowledge that some patients may benefit from medical cannabis. However, access remains highly restricted. Currently, two cannabis-based medications have marketing authorization in Norway, Sativex and Epidyolex (Direktoratet for Medisinske Produkter, 2023b). To get marketing authorization an application for the medical product gets submitted to a regulatory authority, and after the application is evaluated, the regulatory authority may grant the authorisation. This often implies a thorough process looking into extensive clinical trials of the medicine, focusing on the safety, side effects and efficacy of the medicine (European Monitoring Centre for Drugs and Drug Addiction,

2023). Sativex, a combination between CBD and THC, has had marketing authorization since 2013. It is primarily prescribed for multiple sclerosis-related spasticity (Norsk legemiddelhåndbok, 2024). Epidyolex, a purified CBD extract, is used for severe epilepsy conditions such as Dravet syndrome, tuberous sclerosis and Lennox-Gastaut syndrome, and was approved for use in Norway in 2022 (Oslo universitetssykehus, 2024). Both Sativex and Epidyolex have strict regulations regarding prescription, and the access to other medical cannabis products remain highly restricted with only a few patients being granted such treatment (Norsk legemiddelhåndbok, 2024).

Cannabis-based products, regardless of their THC content are regulated under the UN narcotics convention and Norwegian narcotics regulations and are therefore classified as narcotics. Individuals may bring medications for personal medical use when entering Norway, however, as CBD is classified as a narcotic, it is important to follow §19 of the Narcotics Regulations (Direktoratet for Medisinske Produkter, 2025). §19 allows for up to a seven-day supply with a foreign prescription or a 30-day supply with a confirmation from a Norwegian doctor. The confirmation must be provided through a specified form by the Norwegian Directorate for Medical Products and is valid for up to one year from the date of issue (Narkotikaforskriften, 2024, §19). These regulations allow for limited personal use while maintaining strict oversight of cannabis-based products.

All physicians in Norway may prescribe Sativex and Epidyolex, but they may also apply to get approval exemption for unregistered cannabis-based products with less than 1% TCH. Specialists working in private or public hospitals may apply for approval exemption for unregistered cannabis products with over 1% THC (Direktoratet for Medisinske Produkter, 2023a). The physician conducts an evaluation of whether medical cannabis seems to be a good fit or not for the patient in question and needs to explain why this treatment seems to be necessary (Direktoratet for Medisinske Produkter, 2023b). This illustrates the crucial role the physicians hold in the medical cannabis process in Norway, as they are the ones deciding who gets a prescription. Exploring the physician's willingness or restrictiveness to prescribe medical cannabis is therefore essential to understanding why so few patients get the prescription.

A study by Arnfinsen and Kisa (2020) assessed the perceived knowledge, experience and attitudes towards medical cannabis of Norwegian physicians. The study revealed that 70.2% of physicians had little to no knowledge of medical cannabis, despite being familiar with its adverse effects. The therapeutic value of medical cannabis was recognised by most physicians, and those supporting the use of medical cannabis cited potential benefits such as improving quality of life and reducing opioid use. However, many had concerns about drug abuse, adverse effects, lack of information, and stigma as barriers to prescribing medical cannabis. The absence of comprehensive education on medical cannabis in medical training, combined with limited clinical guidelines, may contribute to further physician hesitancy. Physicians with foreign medical diplomas were more likely to support medical cannabis prescriptions than those with Norwegian diplomas, suggesting that international medical education may provide more exposure to cannabis or other non-conventional treatment options. This difference may be influenced by various regulatory environments, differences in education, or more familiarity with medical cannabis in the countries where its use is more widely accepted (Arnfinsen and Kisa, 2020). These findings highlight the need for improved education and clearer clinical guidelines to reduce uncertainty surrounding medical cannabis use. Exploring best practices from countries with more established medical cannabis frameworks could inform policy development and help reduce knowledge gaps and stigma.

Access to medical cannabis in Norway is shaped by both regulatory and practical considerations, including who pays for the treatment and how use may affect legal rights such as driving. In Norway, coverage and regulations depend on the specific product and where the treatment is provided. Approved cannabis-based medications, such as Sativex and Epidyolex, are covered by regional health authorities. Other cannabis-based medications are considered experimental. If they are prescribed through a public hospital, the hospital is responsible for covering the costs. However, if the treatment is offered by a doctor outside the public hospital, the patient must pay for it themselves (Direktoratet for medisinske produkter, 2023b).

Driving regulations for individuals using medical cannabis are strict in Norway. Patients using approved medications, such as Sativex and Epidyolex, may be permitted to drive with a class 1 licence, but only if the treatment is prescribed by a medical specialist, follows approved dosage guidelines, and the patient adheres to medical advice regarding the time between intake and driving.

The patient must not experience side effects that impair their driving ability, and the use of any additional cannabis-based products is not allowed. All other individuals using medical cannabis, including those obtaining products abroad or though exemption schemes, are not permitted a driver's licence (Helsedirektoratet, 2023). This strict regulatory framework highlights the complexity of using medical cannabis in Norway, demonstrating the cautious approach taken by Norwegian authorities.

2.4 Denmark – Norway's brother legalises medical cannabis

On January 1st, 2018, Denmark launched a four-year medical cannabis trial program. This was to assess the safety and efficacy of cannabis-based treatments for patients with chronic illnesses. The main motivation for initiating the trial was to provide a legal and controlled alternative to illegal cannabis use by patients suffering from conditions such as chronic pain. The trial was designed to collect data on the effects, also including side effects, and prescribing patterns of medical cannabis, ensuring that future legislation would be based on scientific evidence. Over this four-year period, the program allowed general practitioners and specialists to prescribe cannabis products, and thousands of patients participated. Challenges such as high costs, limited availability of products, and reluctance from some healthcare providers, were mentioned in the evaluation. However, despite these concerns, the trial was extended in 2022 to further analyse its impact (Indenrigs- og sundhedsministeriet, 2024a).

Following the evaluation of the pilot program, Denmark decided in November 2024 to make medical cannabis a permanent treatment option from 2026 (Indenrigs- og sundhedsministeriet, 2024b). This decision was based on positive patient experiences, demand from patient organisations, and the need to regulate an already widespread practice. The final report highlighted that the patients experienced pain relief and improved quality of life, while doctors gradually became more comfortable with prescribing cannabis-based medicines. Additionally, patient organisations advocated for expanding eligibility criteria and increased product variety, as high costs and limited supply were seen as barriers. In response, policymakers legalised medical cannabis, ensuring continued access under regulated conditions while working to improve guidelines, affordability, and medical supervision (Indenrigs- og sundhedsministeriet, 2024a).

Denmark's decision to legalise medical cannabis reflects a growing recognition of its therapeutic potential, creating an example that may influence neighbouring countries, such as Norway, in their approach to chronic pain treatment.

2.5 The Chronic Care Model

To understand how medical cannabis fits into chronic pain management, a structured approach that considers both patient needs and healthcare system organization is needed. The Chronic Care Model (CCM), developed by Wagner et al. (2005), offers a systematic way to improve chronic disease care. Instead of treating chronic conditions in a reactive way, the CCM emphasizes coordinated care, self-management support, and the integration of community resources. The importance of engaging patients in their own care through self-management support and shared decision-making is emphasized, while ensuring treatments align with scientific evidence. By focusing on structured care delivery, patient empowerment, and integration of community resources, the CCM aims to improve both health outcomes as well as healthcare efficiency (Wagner et al., 2005). Applying the CCM to the research supports the structure of the analysis of how medical cannabis fits into chronic pain management. When exploring the barriers and facilitators of medical cannabis use in Norway, the CCM may highlight key areas where the system either supports or hinders patient access.

2.5.1 Components of the Chronic Care Model

The CCM consists of six key components: health care organization, delivery system design, self-management support, community resources and policies, decision support, and clinical information systems. These elements work together to create a structured approach to chronic disease care, ensuring that treatment decisions are guided by both patient preferences and clinical guidelines (Coleman et al., 2009).

A systematic review by Zwar et al. (2006) identified the CCM as a valuable framework for improving chronic disease management. The review found that self-management support and delivery system design had the largest impact on disease progression, health status, and quality of

life, especially when implemented together. Additionally, decision support and clinical information systems were essential in ensuring that healthcare providers adhered to best practices. This structured approach strengthens the foundation of chronic disease care, offering a model that can be adapted to various healthcare settings, including the integration of new treatment approaches such as medical cannabis for chronic pain management (Zwar et al., 2006).

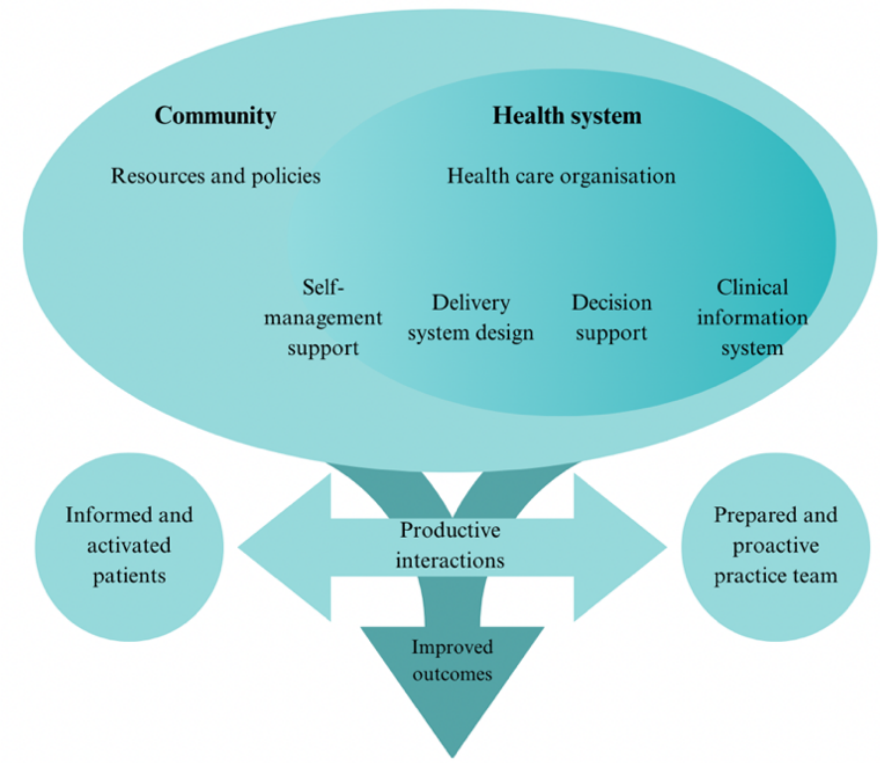

Figure 1: The Chronic Care Model. The author`s own draft based on Wagner et al. 2005

2.5.2 Self-management support: Enabling patients to manage chronic diseases

Self-management support focuses on equipping patients with the knowledge, tools, and guidance necessary to take an active role in managing their condition. This involves structured education, behavioural support, and monitoring resources, as well as ensuring that healthcare providers have the appropriate knowledge and tools to support patients effectively. Effective self-management support has been associated with improved health outcomes and greater patient engagement in decision making (Nutting et al., 2007).

In the context of chronic pain, self-management strategies may include:

- Medication management: Understanding dosages, adhering to prescribed treatments, and recognizing potential side effects.
- Physical activity: Engaging in movement-based therapies such as stretching, low-impact exercise, and strength training to improve mobility.
- Psychological coping mechanisms: Utilizing cognitive-behavioural therapy, mindfulness, and relaxation techniques to address pain perception and emotional distress.
- Lifestyle modifications: Adjusting diet, sleep habits, and daily routines to minimise pain triggers and improve overall wellbeing.

When it comes to using medical cannabis as a self-management tool, access to clear information and guidelines are crucial. However, studies indicate that when formal guidance is lacking, patients often turn to alternative sources for information (Bauer et al., 2019). Without standardised, evidence-based resources, patients may rely on unverified sources or unreliable evidence, which can influence their decisions in way they may not align with clinical best practices. This may contribute to the spread of misinformation, leading to uncertainty and confusion about the effectiveness and appropriate use of treatments.

2.5.3 Delivery system design: Structuring chronic pain care

The delivery system design component of the CCM addresses how healthcare services are organized and the roles of providers in managing chronic conditions (Kim et al., 2024). In Norway, physicians' willingness to prescribe medical cannabis may be rooted in legal factors, today's guidelines or lack thereof. Without standardised procedures, both patients and healthcare providers must navigate a fragmented system, where treatment decisions may be based on subjective judgement rather than established medical consensus.

A well-structured healthcare delivery system ensures that patients receive consistent and coordinated care. Without clear protocols, disparities in treatment access may emerge, leaving patients uncertain about their options. Additionally, decision support encompasses the integration of evidence-based guidelines into practice, which is a key factor as variations in clinical recommendations may shape the providers decision-making and patient access to treatment (Convery et al., 2019). Variability in clinical recommendations may contribute to inconsistencies in care, posing challenges for patients seeking medical cannabis as part of their chronic pain management. Developing standardised protocols may help streamline decision-making and improve the integration of medical cannabis into structured pain management programs.

2.5.4 The Chronic Care Model`s role in improving patient outcomes

The CCM has been widely applied to improve chronic disease management, leading to better healthcare practices and patient health outcomes (Davy et al., 2015). Schmittdiel et al. (2008) examined the relationship between the patient assessment of chronic illness care (ACIC) scores and self-management behaviours, finding that higher ACIC scores were linked to improved self-management behaviours, greater patient satisfaction, and better quality of life. These findings suggest that patients report better outcomes and rate their care more positively when their healthcare aligns with CCM principles, highlighting the model's effectiveness in guiding chronic disease management (Schmittdiel et al., 2008).

Applying the CCM framework to medical cannabis use in chronic pain management allows for a structured analysis of patient experiences and doctors perspectives. Understanding the relationship between regulatory frameworks, clinical practices, and patient self-management strategies may provide valuable insights into improving access to effective treatments. By identifying areas where healthcare policies and practices could be adapted, the CCM offers a framework enhancing patient-centred care and ensuring that chronic pain management strategies, including medical cannabis, are implemented effectively.

2.6 Key research components

Based on insights from the literature review and theoretical framework, the following research question was established: **What are the facilitators and barriers experienced by chronic pain patients and doctors in Norway regarding the use of medical cannabis as a self-management tool?**

The following sub-questions were developed to ensure coherence between the research framework and methodology:

1. What challenges do patients face in the process of getting medical cannabis, and how do they address them?

This first sub-question aims at exploring the various barriers chronic-pain patients might encounter, such as a limited number of prescribing physicians (Norsk legemiddelhåndbok, 2024), strict criteria, and possible stigma associated with medical cannabis use (Arnfinsen & Kisa, 2020). Additionally, it examines the financial and logistical constraints that might hinder the access, including the costs of the medicine, and the prescribing practices (Direktoratet for medisinske produkter, 2023b). Beyond this, the sub-question also seeks to understand how patients navigate and respond to the possible challenges. By addressing these aspects, the study will provide a comprehensive insight into the patient experience in addressing medical cannabis as a self-management tool.

2. What are the key factors influencing doctors' approach to using medical cannabis for chronic pain management, and what concerns or supportive elements impact their decisions?

The role of the physicians in facilitating or restricting access to medical cannabis is a critical part of the process. Physicians hold a gatekeeping role as the prescribers of medical cannabis (Direktoratet for medisinske produkter, 2023b). This second sub-question investigates the perspectives of physicians, focusing on the factors shaping their willingness or reluctance to prescribe medical cannabis for chronic pain patients. Some of these factors may include professional attitudes towards medical cannabis, the availability of clear clinical guidelines, and concerns about the efficacy or safety (Arnfinsen & Kisa, 2020). Additionally, the question explores external influences such as patient demand or neighbouring countries (Indenrigs- og sundhedsministeriet, 2024b), legal considerations, and the presence or absence of available

information on medical cannabis (Arnfinsen & Kisa, 2020). Through the identification of these influences, this study seeks to clarify the dynamics of the healthcare system that affect the integration of medical cannabis into pain management practices.

3. Methods

3.1 Study design

This research employed a qualitative research design to explore the facilitators and barriers of chronic pain patients and doctors regarding the use of medical cannabis as a pain management strategy in Norway. The qualitative method was chosen to gain a deep understanding of the lived experiences and perspectives of the patients and doctors. This approach provides a rich view of the role medical cannabis has as a pain management strategy in the Norwegian health care system (Tenny et al., 2022). The research aims to gather in-depth and comprehensive data to investigate the perspectives of both chronic pain patients and doctors, seeking to provide valuable insights into the complexities surrounding medical cannabis. This exploration will help clarify the underlying reasons for the cautious approach to medical cannabis as a legitimate pain management strategy within the Norwegian healthcare system.

The interviews were conducted in March 2025. Said interviews were led by the researcher, using a semi-structured interview guides covering topics such as self-management practices, facilitators and barriers to access, and experiences of medical cannabis in chronic pain management. Two separate interview guides were developed, one for the patients (appendix 4) and one for the doctors (appendix 5). This was to ensure alignment between the questions and the participants roles. The guides ensured consistency in the interviews, while allowing for participant-driven discussions. The format of the interviews were one-on-one semi-structured interviews. Each interview lasted approximately 30 minutes. The interviews were audio-recorded with the participants consent (appendix 6). Supplementary notes were also taken throughout the interviews.

3.2 Study scope

The study aims to understand the facilitators and barriers chronic pain patients in Norway might encounter in accessing and utilizing medical cannabis as a pain management strategy. The focus of the study is on the experiences and perspectives of chronic pain patients and doctors in Norway regarding the use of medical cannabis for chronic pain. The healthcare organisations contacted in this study provide specialised healthcare for pain patients in Norway. However, the study acknowledges that not all specialised healthcare organisations in Norway are represented in this study due to practical limitations and response rates. The two patient organisations contacted to participate in the study mainly consists of chronic pain patients but does not include all chronic pain patients in Norway and might therefore be limited in the representation. The study seeks to address the gap in existing research on medical cannabis use for chronic pain management in Norway. The results may contribute towards enhancing the understanding of medical cannabis as a pain management strategy for chronic pain patients, possibly contributing to inform or guide clinical practices or policies regarding its use in the Norwegian healthcare setting.

3.3 Population sample

To ensure credibility and diversity of perspectives, participants were purposefully selected based on their relevance to the research question. Purposive sampling is a technique used to select participants based on specific characteristics relevant to the research topic, medical cannabis and chronic pain (Palinkas et al. 2015). As Ahmad and Wilkins (2024) highlight, purposive sampling is not only a recruitment tool, but a structured approach that should guide the entire research process. This method aligns with the study's aim of exploring in-depth perspectives from both patients and doctors. However, it is important to acknowledge the broader concerns around nonprobability sampling, such as the potential for bias and limited generalisability (Ahmad & Wilkins, 2024). Boyd et al. (2023) stress that while nonprobability samples may provide meaningful insights, especially in complex, real-world contexts, researchers must remain cautious and intentional in how such samples are constructed, interpreted and reported (Boyd et al. 2023). Efforts to mitigate these possible biases was done through the creation of a strong theoretical framework and a carefully considered interview guide (appendix 4 and appendix 5). Careful

consideration was given to participant selection, aiming for diversity within the sample to support a nuanced understanding of the topic.

All the participating patients in the study were Norwegian chronic pain patients with first-hand experience of using medical cannabis as a pain management tool. Collecting data from these patients was essential for the study as they are the ones providing personal user experiences of medical cannabis. The patients were contacted via email outreach to relevant patient organisations (appendix 2), with information about the study and the consent form attached to the email (appendix 3 and appendix 6). A total of 8 patients were contacted, of whom 6 agreed to participate, resulting in a final sample of 6 chronic pain patients. Participation criteria for the chronic pain patients included having firsthand experience with the use of medical cannabis as a pain management strategy. The participating patients varied in terms of age, duration of chronic pain, and experience with medical cannabis.

Doctors, mainly pain specialists, were recruited through email (appendix 2). A total of 15 hospitals, 17 clinics, 8 individual doctors, 1 research centre, and 2 doctors' associations were contacted, whereas 18 responded. Out of these, 5 doctors agreed to participate in the study. After conducting one of the interviews, a doctor encouraged coworkers to take part in the study. Two of the doctors' coworkers reached out, and one participated in the study, resulting in a final sample of 6. Those interested in participating in the study replied to the email (appendix 2) and were provided with further information about the study (appendix 3), including confidentiality measures, the option to withdraw from the study, and the consent form (appendix 6). The participation criteria for the doctors included having some level of knowledge or experience in managing chronic pain patients. They had varying knowledge on medical cannabis as a pain management tool. This ensured a range of perspectives, from those with extensive experience and knowledge in chronic pain management, to those who were newer to the topic. The participating doctors varied in age, years of work experience, and resided in different parts of Norway.

The study participants included chronic pain patients with first-hand experience using medical cannabis as a pain management tool, as well as doctors with varying levels of experience in treating chronic pain and knowledge of medical cannabis. All participants resided in different parts of

Norway. Participants were purposefully sampled to ensure the diversity and relevance in terms of experiences, type of chronic pain and viewpoints of using medical cannabis as a pain management tool.

Table 1: Overview of the patient participants

Participant	Age and gender	Type of pain	Accessing medical cannabis
Patient 1	Male 50-60 years old	Chronic plantar fasciitis in heels	Norwegian prescription, and illegally
Patient 2	Female 50-60 years old	Complex regional pain syndrome in shoulder	Travel to the Netherlands with Norwegian referral
Patient 3	Female 40-50 years old	Migraines and fibromyalgia	Travel to the Netherlands with Norwegian referral
Patient 4	Male 30-40 years old	Migraines, cluster and tension headaches, PTSD, neck and shoulder pain	Travel to the Netherlands with Norwegian referral
Patient 5	Male 30-40 years old	Back pains and Multiple Sclerosis	Norwegian prescription at Norwegian pharmacy and illegally
Patient 6	Female 50-60 years old	Stroke, spasms and cramps	Norwegian prescription at Norwegian pharmacy and through CBD association

Table 2: Overview of the doctor participants

Participant	Age and gender	Position	Area in Norway
Doctor 1	Male 60-70 years old	General practitioner, researcher and specialist in general medicine	South of Norway
Doctor 2	Male 50-60 years old	General practitioner, professor, specialist in general medicine and researcher	East of Norway
Doctor 3	Female 50-60 years old	General practitioner	East of Norway
Doctor 4	Male 70-80 years old	General practitioner, specialist in general and community medicine, health manager, municipal chief medical officer, infectious disease doctor, consultant, and member of user committee	South of Norway
Doctor 5	Female 20-30 years old	General practitioner and doctor in specialisation	South of Norway
Doctor 6	Male 70-80 years old	Anesthetist and professor	East of Norway

3.4 Data

The semi-structured interviews served as the primary method of data collection (appendix 4 and appendix 5). To ensure privacy and comfort, the interviews were conducted online via the video conferencing software Teams. This format was chosen due to time constraints and the geographic spread of participants across Norway. The semi-structured interview guides included open-ended questions aimed at exploring participants' experiences and perceptions of medical cannabis as a pain management strategy (appendix 4 and appendix 5). With participants' consent, the interviews were audio-recorded and later transcribed for data analysis purposes (appendix 6).

A thematic analysis was used to guide the analysis of the interview data, following the reflexive approach developed by Braun and Clarke (2022). This approach emphasises the active, interpretive nature of theme development, positioning the researcher with a critical role in the analytical process (Braun & Clarke, 2022). As Braun and Clarke (2020) explain, thematic analysis is not about only finding themes, but also about generating them through a process of reflection and interpretation. The method allows for a nuanced understanding of the data while offering a clear framework for analysis, making it a flexible and adaptable approach to qualitative research (Braun & Clarke, 2020). According to Braun and Clarke (2023), a key aspect of good practice in thematic analysis is the importance of ensuring accuracy while remaining reflexive throughout the process. This was achieved by repeatedly engaging with the interview data to develop a deep understanding of the participants experiences. The software MAXQDA 24 was used to support the analysis to transcribe, organise and code the data systematically (appendix 7). The analytic process started with thorough and repeated reading of the transcripts to ensure familiarity with the data, followed by the generation of initial codes based on the participants language and perspectives (Appendix 7). As Braun and Clarke (2020) note, these codes should capture the nuanced meanings expressed by the participants, reflecting their lived experiences rather than simply imposing pre-existing theoretical categories. Reflexivity is a central part of this approach (Braun and Clarke, 2022). Throughout the analysis the researcher engaged in regular self-reflection on both the position of the researcher and possible assumptions, ensuring transparency in how these might influence the interpretation of the data. The aim of doing so was to preserve internal consistency and clarity across the themes, as

emphasised by Braun and Clarke (2023). This reflexive approach allowed for the researcher to stay closely connected to the lived experiences of the participants, ensuring that the findings were grounded in their perspectives while also exploring broader questions about chronic pain management and the role of medical cannabis in Norway. This process also facilitated a deeper understanding of the complexities surrounding the experiences of both patients and doctors, as well as the challenges and opportunities within the Norwegian healthcare system.

3.5 Ethical approval

Ethical approval was obtained from the Ethical Committee at Management Center Innsbruck in Austria. Written informed consent was obtained from all participants before the interviews were conducted and recorded (appendix 6). Participants were informed about the study`s purpose, procedures, confidentiality measures, and their right to withdraw (appendix 3). To ensure privacy and compliance with ethical research standards, all the data was anonymised and securely stored with password protection, accessible only to the researcher. The participants confidentiality and anonymity were ensured by using pseudonyms for all participants.

4. Results

This chapter presents the main findings of the study, based on interviews conducted with chronic pain patients and doctors, mainly pain specialists, in Norway. The aim of the research was to explore the experiences and perspectives on the use of medical cannabis as a pain management tool for chronic pain. The results are structured around key themes that emerged during the data analysis, which reflect both the perceived facilitators and barriers related to the use of medical cannabis.

A total of 6 chronic pain patients and 6 doctors participated in the study. All interviews were conducted via the online video conferencing program Teams, and all participants provided informed consent prior to the interviews (appendix 6). To ensure confidentiality, no identifying information is presented, and quotes have been anonymised. The findings are organised into two

main sections, the experiences of chronic pain patients using medical cannabis, and the perspectives of Norwegian doctors. Where appropriate, quotes from participants are included to highlight key points.

4.1 How the patients access medical cannabis

Understanding how the patients first encountered medical cannabis, and the different ways they are accessing it is essential, as this reflects both the legal and practical barriers influencing patients' ability to manage their condition through non-conventional treatment options. The patients often described a trial-and-error journey before arriving at medical cannabis, often shaped by frustration with the limitations of conventional pain management strategies (P1, P2, P3, P4, P5, P6).

For all the patients who participated in this study, the introduction to medical cannabis did not come from a healthcare provider. Instead, patients reported learning about it through friends and family (P1, P5, P6), patient communities (P4) or their own research on alternative pain management (P2, P3). A common theme was the sense of being left to navigate this option on their own, without guidance or support from within the healthcare system. This independent search often occurred after years of chronic pain and little to no success with conventional treatment options (P1, P2, P3, P4, P5, P6).

> [...] In sheer desperation, I tried medical cannabis for the first time, and I had a lot of stigma and prejudice with me. I grew up in a Christian environment, so I thought it was scary to try. [...] (Patient 2)

4.1.1 Access through Norwegian pharmacies

Among the patients who had accessed medical cannabis through Norwegian pharmacies (P1, P2, P5, P6), experiences reflected both the regulatory complexity and the limited availability of treatment in Norway. Two participants (P1, P5) had been prescribed medical cannabis with more than 1% THC through the Norwegian healthcare system, but only one of them, a patient with multiple sclerosis, had a current prescription (P5). Another patient (P6) was receiving Bedrolite, a type of medical cannabis containing less than 1% THC (Direktoratet for medisinske produkter,

2023a). In addition, three patients had at some point used Sativex (P2, P5, P6), one of the few cannabis-based medications currently approved for use in Norway (Direktoratet for Medisinske Produkter, 2023b). However, their experiences with Sativex were largely negative. While they initially hoped for pain relief, they reported minimal therapeutic effect and a range of unpleasant side effects, including metallic taste, mouth irritation and bleeding gums (P2, P5, P6). Additionally, the high cost of Sativex, which is not a fully reimbursed medicine, was cited as a significant barrier to continued use (P2). For these patients, Sativex was perceived as both clinically ineffective and financially unsuitable.

> [...] MS and epilepsy are the only two diagnoses in Norway as of today that have the right to medical cannabis. I feel like it was a bit of good luck in the bad luck, for my part. I've fought my whole life to get medical cannabis and finally wohoo! But then you've been given a pretty bad diagnosis in addition. [...] (Patient 5)

4.1.2 Access through travel abroad

Three patients travelled abroad to access medical cannabis through legal means (P2, P3, P4). Specifically, these patients travel to the Netherlands with a referral from a Norwegian doctor to obtain medical cannabis legally. There, they consult with Dutch physicians and obtain prescriptions for medical cannabis products and are then permitted to bring the medication back to Norway for personal use, up to 30 days' worth (Direktoratet for Medisinske Produkter, 2025). Although this route allows for legal access, it was described as burdensome. Patients emphasised the physical and emotional burden of navigating a foreign healthcare system, travelling with chronic pain, and large financial costs associated with the process. Despite these challenges, patients who pursued this route often did so out of a desire to stay within legal boundaries while accessing what they believe is the most effective form of pain relief for them (P2, P3, P4).

> [...] I travel to the Netherlands. I am one of them. I travel monthly and have done so for almost three years now. I think it is completely crazy. It has led me to being hospitalised in the Netherlands. When I have a seizure, I throw up, can't see, and stuff like that. I am

> completely immobile. I am not positive towards those travels. It's completely hopeless [...] (Patient 4)

4.1.3 Access through the illegal market

Some patients ultimately turned to the illegal market to obtain "medical" cannabis (P1, P5). Engaging in illegal access was not a decision that was made lightly by these patients, but rather a choice shaped by necessity and disappointment with the limitations of the formal healthcare system. The patients described having exhausted the formal options, either being denied prescriptions altogether or finding the approved options, such as Sativex or medical travel, either being ineffective or unaffordable. Turning to the illegal market introduced new challenges. Patients expressed strong concerns about the legal impacts, stigma, and the unreliable quality, type and supply of illegal cannabis (P1, P5). Despite these concerns, patients emphasised that untreated chronic pain had an overpowering impact on their daily function, mental health, and overall quality of life. For these patients, the decision to access cannabis illegally was not an act of rebellion, but about reclaiming some measures of relief and control in the face of ongoing daily suffering (P1, P5).

> [...] I am referred to the illegal market by my doctor. It is a fight for it. When you have it medically, you get the same product every single time. When you go to the illegal market, you will not get the same product each time. That means that you are constantly getting new effects on everything. It's like switching between oxycodone to paracetamol to fentanyl. Its idiotic, you don't get any connection in life. And when you don't get the types that work well for you, it feels like the body is rusting. [...] (Patient 1)

One patient (P1) initially gained legal access through a prescription from a doctor who was nearing the end of their employment and therefore felt less constrained by political and institutional barriers. However, following the departure of this doctor, the patient was removed from the pain clinic by a new physician who cited administrative and political concerns, despite the treatments perceived effectiveness. The patient later briefly regained access with a new doctor and received partial reimbursement. However, the prescriptions were eventually blocked at the pharmacy,

cutting off this supply. With no remaining legal pathways and with encouragement from the doctor, the patient turned to the illegal market (P1).

> [...] It's not exactly easy when you are sitting there, and you can't use opioids and don't get access to medical cannabis. This has been a topic at both the pain clinic and the hospital. And the hospital has said clearly that if I want medical cannabis, I can either go to Sweden and buy CBD at health food stores or turn to the illegal market. [...] (Patient 1)

Regardless of the method of access, all patients emphasized that their use of cannabis was medically motivated, and not recreational. They aimed at improving their pain management, quality of life, and day-to-day functioning. These access experiences highlight the complexity of navigating medical cannabis use in a country with a restrictive legal framework and set a stage for understanding the perceived impact of cannabis on pain, well-being, and self-management.

4.2 Positive effects experienced by patients

The interviews revealed a wide range of positive effects associated with the use of medical cannabis among chronic pain patients. These effects were not limited to symptom relief, but extended to improvements in emotional well-being, daily functioning, and perceptions of autonomy. Patients often described medical cannabis as a supportive tool that allowed them to regain a sense of control over their condition and improve overall quality of life (P1, P2, P3, P4, P5, P6).

> [...] When I first dared to try it, within 20 minutes the pain was eliminated. So, I was one of those who had that effect, and it was revolutionary. [...] (Patient 2)

4.2.1 Pain relief and symptom management

Pain reduction was one of the most consistently mentioned outcomes. While most patients did not experience complete pain relief, they described a notable reduction in pain intensity and frequency (P1, P2, P3, P4, P5, P6). This often allowed for more manageable daily experiences, including greater mobility, reduced physical strain, and less reliance on bed rest. The patients often compared cannabis to traditional treatment options, particularly opioids, noting that while opioids might

temporarily dull the pain, they often come with side effects such as cognitive fog, emotional changes, and stomach issues (P1, P2, P3, P4, P5, P6). Furthermore, patients highlighted that the pain relief provided by medical cannabis felt different from opioids, it felt softer and more natural. It was described as feeling more integrated into the body, without the sedative or dissociative effects they associated with other prescription medications, such as opioids (P5). A sense of living with pain but not being dominated by it, appeared to be a central outcome across patients (P1, P2, P3, P4, P5, P6).

> […] I use CBD and suddenly I have a much better functioning body. [...] I haven't had these spasms that I've had at night all these years. Cramps, restlessness, mind racing and other struggles. Not having to take painkillers and sleeping pills or anything. I can just throw it away. It's two different lives. [...] (Patient 6)

4.2.2 Improved sleep, appetite and sex life

Patients often described how medical cannabis helped them with everyday aspects, such as sleep, hunger and sex drive (P1, P2, P3, P4, P5, P6). Areas of their life that had been dulled or disrupted by pain or side effects of medications. Pain-induced insomnia had previously contributed to a vicious cycle of fatigue, stress, and lowered pain thresholds throughout the day. With medical cannabis use, this cycle was often broken. Patients described waking up less frequently due to pain flare-ups and feeling more rested in the mornings (P1, P2, P3, P4, P6).

> [...] Sleep has been a problem for me for quite some time, and I have been completely dependent on sleeping pills to even get just a few hours of sleep. After being on cannabis over time, I have managed to phase out all sleeping pills. [...] (Patient 2)

Several patients also mentioned regaining their appetite (P2, P3, P4, P6). This meant finally being able to enjoy food again after periods of nausea, stomach problems or medication related side effects. Another area that came up in one of the interviews was sex drive. Chronic pain and fatigue had made sexual activity difficult or unappealing. After starting using medical cannabis, their

interest in sex had returned (P1). Although this was not something that was frequently mentioned in the interviews.

> [...] I have nothing negative to say about it, because everything in my life got better. My mood got better, I felt better, my stomach got better, my sex life got better. It has such a positive effect. [...] (Patient 1)

4.2.3 Emotional well-being

Closely tied to improved sleep was a reduction in emotional distress. Many patients mentioned a decrease in anxiety levels and mood swings, which had previously been intensified by chronic pain and social isolation (P1, P2, P3, P4, P6). This emotional stabilisation may be linked to the calming properties of cannabis itself or to indirect factors, such as reduced pain and improved sleep, that improved the patient's mental state. The ability to experience calm or contentment without antidepressants or antianxiety medications was described as a major shift in their self-perception and well-being (P3).

> [...] I have complex PTSD, and I don't know what I would do without medical cannabis. I would probably have been heavily medicated with something else. If I'm about to have a panic attack, the drops stop it better than a benzodiazepine or anything else. After I got the cannabis, I haven't used anything for the anxiety either. Except when I travel to the Netherlands, because then I need it on the way there. [...] (Patient 3)

Much of the focus in the interviews went to the physical symptoms, quality of life and well-being. Some patients also shared how medical cannabis had positively affected their mental health (P1, P2, P3, P4, P6). Chronic pain had left many in a state of emotional exhaustion, with some describing periods of severe depression and suicidal thoughts (P1, P2). For some, the effects of chronic pain, poor sleep, social isolation, and a perceived lack of treatment options led to a loss of hope (P1, P2, P3). Medical cannabis, by reducing pain, and improving their overall well-being, was described as contributing to an improvement in their mental health (P1, P2). Patients

emphasised that the relief was not only physical, but also emotional. For many, the use of medical cannabis marked a turning point, a moment where life once again felt bearable (P1, P2, P3, P4).

> [...] I was in a state of mind that it was going to be my last year. I had plans to end it and I was looking forward to it. It's a completely crazy feeling afterwards that you were looking forward to finally ending it. But when your Christmas wish has been to end up in a coma for a couple of years, it's a bit like that. [...] (Patient 1)

> [...] I lived with constant suicidal thoughts, and the pain was so intense. It was no life. [...] (Patient 2)

4.2.4 Increased functionality in daily life

Beyond the clinical indicators of pain and sleep, patients emphasized improvements in everyday functionality (P1, P2, P3, P4, P5, P6). Many described resuming activities they had previously abandoned, such as walking, participating in social gatherings, or playing with their children (P1, P2, P3, P5). These shifts, while seemingly small, were described as deeply meaningful, contributing to a renewed sense of identity and purpose. The improved functionality was not always linear or consistent, but even temporary gains were highly valued. Some patients framed these improvements as establishing a sense of normality back into their lives, that felt sustainable and balanced (P1, P2, P3).

> [...] There is something about trying to be social when it feels like you're in the middle of a horror scenario, because that's what it feels like to be in fight-flight mode. [...] The fact that cannabis reduces fight-flight mode means that I'm able to be present with others. I'm able to participate in the conversation in a completely different way. I get something out of being social. [...] (Patient 2)

Moreover, patients described regaining the ability to take on roles that they had previously lost or feared they would never be able to return to (P1, P2, P3, P5). Some mentioned that they had been able to start volunteer work or studying (P2, P3). These activities were not only a sign of improved

functionality but also carried strong emotional and social value. Being able to contribute academically or socially, was experienced as a step towards strengthening self-worth and identity. Returning to such roles was not simply about productivity but also about feeling human again, being seen, needed and engaging in the world beyond the illness (P1, P2, P3, P5).

> [...] You can't help but see it in me. My children say they have a new mother, and my whole family has a new member. I didn't exist for seven years. I lived in a dark room, lying down, pill-eating, and now I'm studying and doing all the normal things again. I've got my life back in every way. [...] (Patient 3)

4.2.5 Tolerable and manageable side effects

Some patients acknowledged experiencing some side effects, but these were generally viewed as minor and manageable, especially in comparison to those associated with other medications (P1, P3). Becoming giggly, nauseous, and experiencing trembling were some of the reported effects. However, these were described as temporary, only lasting a few minutes, and typically influenced by the type of cannabis used, and the dosage (P1, P3). Importantly, patients repeatedly compared these side effects to those experienced with conventional pain medications, such as opioids. Cannabis was often described as having fewer negative effects on their day-to-day functioning (P1, P2, P3, P4, P5, P6). For some individuals, the ability to tolerate the treatment itself, without feeling numb or shut down, was an important benefit and contributed to their overall sense of well-being (P4, P5).

> [...] There are so many fewer side effects. In the beginning it was very strange because I became giggly. But the first time when I got strong medications, I was walking like a zombie, and you don't do that with cannabis. You might get a little bit affected for the first 20 minutes, but not anymore, as I have used it for 6 years now. [...] (Patient 1)

Throughout the interviews, it became clear that the benefits of medical cannabis reached far beyond just pain relief for these patients. While easing physical symptoms was a key part, patients often described a broader shift in how they were able to live their lives (P1, P2, P3, P4, P5, P6). Better

sleep, greater emotional stability, and the ability to engage in everyday activities were recurring themes. These experiences were deeply personal and often described as life changing. For many, medical cannabis was not just about managing symptoms, it was about regaining parts of themselves that they had not seen in years (P1, P2, P3, P5). In this way, the treatment played a role in rebuilding a sense of balance, identity and possibility. While the positive effects were meaningful and important, patients also described a range of challenges and limitations that complicated their use of medical cannabis.

4.3 Barriers for the patients

Although medical cannabis is legal for those with a prescription, the patients experienced social consequences, particularly distance, tension, or even loss in social relationships due to it (P1, P2, P3, P4, P5, P6). However, the challenges were not only found in their social lives, but also institutional and legal. Compared to the social barriers, these experiences were more structural. Patients described losing access to healthcare (P4), getting drug-related diagnosis (P4), loss of driver's licence (P1, P5, P6), and facing police attention (P5), due to their medical cannabis use. They often felt they were being punished or challenged for trying to manage their pain in a way that worked for them (P1, P2, P3, P4, P5, P6).

> [...] I was informed that my cognitive abilities and memory are affected to such an extent that I cannot receive psychological treatment. The letter said I cannot be treated because I use medical cannabis. [...] Being denied treatment, denied mental health care, receiving different letters with different information. It's hard to fight all that when you're sick. [...] (Patient 4)

4.3.1 Loss of social circle

For many, the stigma surrounding medical cannabis use led to a notable loss of social connections (P1, P2, P3, P5, P6). One described how the smell from cannabis alone caused complaints from neighbours and uncomfortable confrontations (P6). The stigma was much deeper for others, with loss of social networks (P1, P2, P3, P5). One patient described how they used to be the social one, someone everyone knew, but now their social circle had disappeared due to the use of medical

cannabis (P5). They pulled away from others and felt that others had slowly pulled away from them as well. In more neutral or professional settings, they avoided talking openly about their use, because they didn't know how people would react (P1, P5). In some cases, family members openly disagreed with their use, creating rifts and ongoing conflict (P3, P5). Their family continued to struggle with the idea, even though everything was done legally.

> [...] I don't have a social network anymore. It doesn't exist. Or rather, I'm not completely lonely and abandoned. But before I was the social one in the city, I knew everyone. I've withdrawn, and we have noticed they've also withdrawn from us. [...] (Patient 5)

4.3.2 Parenting and the fear of being judged

Some of the patients with children talked about how their medical cannabis use made them anxious about how other parents would perceive them (P3, P5). One parent expressed deep concern that their children's friends might not be allowed to visit anymore, due to their medical cannabis treatment. They worried that other parents would assume the worst, that cannabis meant drugs, and drugs meant danger (P5). Another patient shared how their ex-partner continued to associate medical cannabis with illegal drug use, which eventually triggered an investigation from child protective services for suspected drug abuse (P3). Even with a legal prescription and full documentation, the process was long, difficult, and emotionally exhausting. The constant fear of being misunderstood or labelled as an unfit or dangerous parent was a heavy burden for the patients. They described how they constantly felt they had to prove themselves as fit parents, despite having followed the law (P3, P5).

> [...] I've had it tough with child protective services. It lasted around two and a half years, even though they got the prescription. They had everything they needed and everything was fine, but there was still suspicion of drug abuse. They even suggested drug testing me for cannabis, while I had the prescription for it. My lawyer was a bit confused, since they then wanted to prove that I was taking my medication. [...] (Patient 3)

4.3.3 Name calling and the power of labels

Some patients shared how their medical cannabis use had affected their reputation, especially in smaller communities (P2, P5). They described how they were referred to with nicknames such as “drug head” or “the cannabis lady” (P2, P5). Even though they were open about their diagnosis and treatment, the labels stuck, overshadowing everything else. One patient said that people were happy to support them privately, but no one dared to speak up publicly out of fear (P1). This shaped how they were seen and talked about, even limiting their opportunities to contribute to the community.

> [...] I've been very open about it. I've been in the media and during one phase of the illness I lived at home in a very small municipality with few people. And then I’ve heard recently that among some people there I was just known as “The cannabis lady”. [...] (Patient 2)

4.3.4 Limited access through the healthcare system

The patients explained how difficult it was to access medical cannabis in Norway, even when they had a diagnosis that could justify the use (P1, P2, P3, P4, P5, P6). Access depended heavily on the attitudes of the individual doctors. Some doctors refused to prescribe medical cannabis or refer the patients to others who could, leaving some patients without options (P1). The process was described as difficult and challenging. Patients described a sense resistance from the healthcare sector when trying to access medical cannabis. Many patients also described a feeling of not being taken seriously by the healthcare providers (P1, P2, P3, P4, P5).

> [...] You live a life that is limited by the illness, and you have found a medication that gives you your life back. You go to a doctor and ask to be met on equal terms to discuss your experiences. And then it doesn't work. You are demoted, looked down upon, placed as a submissive, and that is a trigger. It feels like I have my hand on a glowing hot plate, and then there is a doctor on the side that doesn’t want to help and turn it off. [...] (Patient 2)

> [...] The travels are a huge burden in every way, both financially, but also physically and mentally. It's demanding. I usually stay in bed for several days after I get home, and there are usually a couple of panic attacks on the trip every time. [...] (Patient 3)

4.3.5 Drug diagnosis and refused treatment

Several patients described feeling misunderstood or even unwelcome in the healthcare system after disclosing their use of medical cannabis (P1, P2, P3, P4, P5). One patient was formally labelled with a drug diagnosis, cannabis dependence syndrome, after disclosing medical cannabis use to a healthcare professional (P4). This label followed the patient through different parts of the system, affecting how they were treated. The drug diagnosis was a factor of worry and fear for some of the patients as the diagnosis would impact their medical records and future treatments (P1). Following the drug diagnosis the patient had negative experiences, such as not being taken seriously in the healthcare sector and being refused mental health care altogether (P4).

> [...] You are denied mental health care because you have cannabis dependence syndrome, and then you are not possible to treat. It is a bit weird to be denied mental health care when you are struggling with extreme pain because you have started using a medication that you feel helps. [...] (Patient 4)

4.3.6 Loss of driver's licence

Cannabis use has also created problems outside the healthcare system. One of the most common concerns for the patients was the risk of losing their driver's licence (P1, P2, P3, P4, P5, P6). Even though medical cannabis is used as medicine, the patients still test positive for THC and therefore have their licence revoked (Helsedirektoratet, 2023). For some, this restriction felt unfair and disconnected from their actual ability to drive safely (P5, P6). This restriction was described as unreasonable as they were allowed to keep their driver's license when they were using other strong medications, such as opioids (P1, P6).

> [...] They came and collected my driver's license. Two uniformed police officers and the police car stopped the whole street. They stopped in the middle of the road. [...] They rang the doorbell and asked for my driver's license. They could have just called me asked me to send it. I would have sent it. [...] (Patient 1)

4.3.7 Feeling criminalised by the police

Some patients expressed anxiety about potential police contact (P1, P5). Even those with legal prescriptions worried that their treatment could lead to trouble. For some, the fear was not hypothetical, they had real experiences of being pursued by the police, despite following the legal process for accessing medical cannabis (P1, P5). One patient shared that they had been pursued by the police since they were a teenager and felt that the persecution continued even after receiving a legal prescription (P5). Others voiced similar concerns, that even when carrying legal medical cannabis, they were placed in a vulnerable position (P3). Some felt that even though medical cannabis is legal, its association with recreational use continued to shape how they were perceived (P6). This created underlying stress and made some feel criminalised simply for following their treatment.

> [...] I have been pursued by the police since I was 16, and it continues to this day. I have a prescription. I have everything in order. But my family is struggling with the stigma. I am simply being persecuted. My family is being stopped by the police because the car is registered on me. [...] (Patient 5)

4.3.8 The financial burden

One of the most central themes in the interviews with the patients were the financial burden associated with using medical cannabis. One patient explained having spent 340,000 NOK (29,283 euros) out-of-pocket, despite ongoing attempts to have the treatment recognised and covered as part of a medical trial (P5). Another patient explained having to apply for financial assistance from the labour and welfare administration, NAV, only to be met with resistance from the hospital (P1). Monthly costs ranged from around 900 NOK (77 euros) to over 10,000 NOK (861 euros) (P1, P6). One patient pointed out the paradox in the system, where they were denied, a medication costing 5,000 NOK (430 euros) per month, while a hospitalisation in their case would cost the state tens of thousands within a day (P3). This patient explained how hospitalisations were a regular occurrence when not having access to medical cannabis. Some patients expressed frustration over the lack of reimbursement and described the process of applying for support as both complicated and discouraging (P1, P5). Overall, the cost of treatment did not only create financial strain for the

patients but also left some with a feeling of guilt and selfishness, since they had to spend this money on medicine and not stuff for the family (P5).

> [...] I have spent 340,000 NOK (29,283 euros) so far on medication. It is a burden on the family in every possible way. But we have also sat down and talked about that, it is better for dad to be okay and feel that he functions throughout the day. Even though I feel it a little bit that my family has lost almost 400,000 NOK (34,450 euros) that could have been used on things we could enjoy. [...] (Patient 5)

> [...] It was Sativex and it's expensive. It's 6,000 kroner (517 euros) a month to use it. I used it for a while, and then it became so complicated to make things work for me that I had to stop. [...] (Patient 2)

Throughout the interviews, it became clear that using medical cannabis came with consequences beyond the medication itself. While the patients had found a treatment that helped them function better and reclaim parts of everyday life, if often came at social and emotional costs. Experiences of judgement and stigma, strained relationships, and societal pushback were common, and often left the patients feeling isolated and exposed. Even with legal prescriptions, they found themselves navigating life shaped by stigma, misunderstanding, and financial burdens. These challenges did not only affect how others viewed them, but also how they viewed themselves. For many, using medical cannabis was not just a personal health choice, but something that carried real consequences also across different areas of life.

4.4 Doctors' knowledge of medical cannabis

Exploring the level of Norwegian doctors' knowledge about medical cannabis is essential for understanding their attitudes towards its use as a pain management tool. Their level of knowledge on the topic influences how they approach discussions on medical cannabis and affects their willingness to consider it as a treatment option. While this study may have attracted doctors who are particularly interested in the subject, it reveals varying levels of knowledge among the doctors.

> [...] The main barrier is the lack of knowledge among doctors, which means that they do not help patients even within the framework where they can. [...] (Doctor 3)

Some of the interviewed doctors described their knowledge of medical cannabis as somewhat limited (D1, D5). Two had experience prescribing it to patients, or referring patients to the Netherlands (D3, D6), however for the most part the doctors' knowledge was limited to what they had read in studies and through the media (D1, D2, D4, D5). None of the doctors had received formal education on medical cannabis, except for one who had taken part in international programs (D3). One doctor admitted uncertainty when asked about their knowledge, despite holding a senior position in a relevant professional group (D1). Others described gaining their knowledge on the topic through personal initiative, reading studies, the media, and following developments in the field (D1, D2, D4, D6).

> [...] Cannabis is not a big conversation in pain professional medical circles in Norway. I think I can just say that flat out, the big conversation is about opioids and limiting opioids. [...] (Doctor 1)

One doctor reflected on the lack of exposure to the topic during their medical education and clinical practice, noting that they had not encountered any information on medical cannabis either during medical school or in their first years of working as a doctor. They described their knowledge as minimal and expressed surprise that the topic had not been more discussed in their training. The absence of formal education on the topic left them feeling unprepared, leading this doctor to do research on the topic prior to the interview. After reading a few studies on the topic the doctor seemed surprised that this topic was not more discussed in their education or at work (D5).

> [...] I have of course heard about it, but I have very little knowledge of it. I think that it is a bit strange that during the studies and when I now have worked after I finished studying,

> that it is not something that is talked about more. I have not come across discussing it much with anyone. I would say I have very little knowledge of it. [...] (Doctor 5)

In contrast, a few doctors had followed the debates and studies more closely (D3, D4, D6). One doctor described having extensive and experience-based knowledge of medical cannabis. Their interest had been sparked after an encounter with a patient, who reported benefiting from cannabis. This encounter inspired the doctor to read scientific literature, take part in global professional networks and international educations on medical cannabis. The doctor was also one of two doctors' who had direct clinical experience with prescribing medical cannabis or referring patients to the Netherlands (D3).

> [...] I discovered when I sat down and started reading a little that cannabis affects many of the aspects that manages chronic disease. So, then I became even more interested. I signed up for international cannabis treatment educations, and I have also read and signed up for different types of international forums for doctors who work in this field internationally. [...] (Doctor 3)

4.4.1 Knowledge of the endocannabinoid system

While their knowledge of medical cannabis varied, many doctors expressed limited understanding of the endocannabinoid system, which is a crucial part in the understanding of how medical cannabis works in pain management. Some doctors expressed having a basic awareness of its existence but lacking a deeper understanding of its function or clinical relevance to medical cannabis (D1, D5). One doctor stated that most general practitioners are aware of the system (D6). Another doctor expressed having interest in receiving formal knowledge on the topic from for example courses or lectures, but that this is not something that is currently being offered in Norway (D1).

> [...] When you ask, I'm sitting there with my eyes wide open and have a senior position in a relevant professional group. I could imagine I would have attended something like that. A neat course on the endocannabinoid system. That would be very interesting. [...] (Doctor 1)

Others showed more in-depth understanding of the system. They noted that the system plays a regulatory role in maintaining balance across several functions, although they viewed it as less potent than other systems influenced by steroids or opioids (D6). The endocannabinoid system was viewed as a potential third pain system by one of the doctors, alongside the opioid and glutamate systems. Additionally, suggesting that medical cannabis may serve as a valuable complementary treatment for certain patients, particularly given its relatively mild side effects (D4). A different doctor emphasized that the influence of the system on pain modulation is often overlooked, especially when efforts are made to move away from pharmacological pain treatments altogether. They argued that the endocannabinoid system plays a key role in shaping pain perception, which is an important consideration in the broader context of chronic pain management (D3).

> [...] I think all doctors know that we have an endocannabinoid system. [...] We have molecules that we produce ourselves that affect the system. [...] It is perhaps less potent than steroids and adrenaline or opioids for that matter. But it is certainly present, and there has been a lot of research on it and what functions they have. I think most doctors agree on that. [...] (Doctor 6)

The interviews revealed variability in the doctors' knowledge of medical cannabis, largely shaped by personal interest and patient encounters. While some of the doctors' expressed having limited knowledge of the topic (D1, D5), others had taken steps to learn more about medical cannabis (D3, D4, D6). Additionally, the knowledge of the endocannabinoid system remained superficial for some, indicating a disconnect between emerging scientific literature and medical education (D1, D5). Addressing the lack of knowledge is essential in the understanding of how medical cannabis is viewed as a pain management tool in Norway.

4.5 Doctors' positive views

Although medical cannabis remains a highly controversial medicine in Norway, the interviewed doctors described it as a promising alternative to conventional pain management. Their perspectives were largely shaped by patient experiences and studies on the topic. The main supporting reasons presented by the doctors included quality of life, positive patient experiences, and a more holistic view of pain management (D1, D2, D3, D4, D5, D6).

> [...] It is a real shame, because I have had very good experience with some patients. Admittedly not all, but some types of pain and some patients had very good effects from medical cannabis. [...] (Doctor 6)

4.5.1 An alternative to opioids and other medications

A recurring theme among the doctors' who were supportive of medical cannabis was its role as an alternative to conventional mediations such as opioids. Particularly in cases involving neuropathic pain, the doctors' considered medical cannabis to be at least as effective, or even superior to opioids (D1, D2, D3, D4, D5, D6). One doctor emphasized that the risk of overdose is notably lower with cannabis, and that the side effects are generally milder, especially when compared to other pain management medications (D4). Another doctor highlighted that medical cannabis is non-lethal, even in large doses, contrasting it with the risks of opioid overdose (D3).

> [...] It is about manipulating the endocannabinoid system as effectively as possible. The side effects are limited in most people. Some become drowsy. They become so of course of opioids too. And where cannabinoids can be alternatives [...] then this is a much less dangerous substance. [...] (Doctor 4)

Another reason for the doctors' support of medical cannabis was its potential to reduce the use of opioids and other prescription drugs. One doctor referred to international research showing that in areas where medical cannabis has been introduced, there has been a decline in the use of other

medications. According to this doctor these reductions typically range between 11% and 25%, depending on how and where they are measured. From their perspective, this was a meaningful change, especially in the context of opioid dependency and side effects (D3).

> [...] There is a pretty noticeable reduction in the use of other medications somewhere between 11% and 25%, depending on how you measure it and where. And there are sleeping pills, antidepressants, and painkillers of all colours. [...] (Doctor 3)

> [...] My experience is that by starting cannabinoid or cannabis products, you can reduce or remove patients from opioids. And that is a plus that is not mentioned enough. [...] (Doctor 6)

One doctor challenged the inconsistency in Norway's current prescribing practices (D6). While any physician is allowed to prescribe opioids (Helsedirektoratet, 2021), only specialists may prescribe cannabis-based medications containing over 1% THC (Direktoratet for Medisinske Produkter, 2023a). This doctor questioned whether this policy truly reflects patient safety concerns, arguing that if medical cannabis is considered less harmful than opioids, the regulations should be equal or even less restrictive (D6). Another doctor pointed out the paradox that medications with higher addiction potential are more widely accessible than medical cannabis, which in their view has a more favourable safety profile (D3).

> [...] I find it relatively unreasonable that we can prescribe narcotics and opioids that Helfo covers, while we cannot prescribe another narcotic, cannabis. There is a lot of bureaucracy, at least in the two places I work. I can still prescribe medical cannabis, but it is significantly tightened. [...] (Doctor 6)

4.5.2 Positive patient experiences

One of the most notable influences for doctors to support medical cannabis was having direct experience with patients who had benefitted from it. Doctors' described cases involving individuals with chronic pain who had not responded well to conventional treatments but reported

improvements after using medical cannabis. These experiences helped shift the views of some doctors who were initially sceptical or neutral to the treatment. Although most of the doctors had not personally prescribed medical cannabis or referred patients to other who can, seeing positive patient outcomes led many to become more open-minded and accepting of its potential role in pain management. In some cases, doctors described seeing patients who had regained a sense of independence, improved sleep, or reduced reliance on other medications after starting using medical cannabis (D1, D2, D3, D4, D6).

> [...] I have several specific examples of people who have been given very strong painkillers on a large scale and have been quite impacted by it. Who have then stumbled upon either legal or illegal medical cannabis and have then been given a new life. [...] (Doctor 4)

4.5.3 The value of improved quality of life

Another key reason why some doctors supported the use of medical cannabis was its potential to improve patients' overall well-being. Several doctors described how medical cannabis, beyond relieving physical pain, also seemed to help patients relax, and feel more in control of their everyday lives (D1, D3, D6). One doctor emphasised that improvements in quality of life is a valid treatment goal, highlighting a broader understanding of care outcomes, beyond simply symptom-based approaches (D2). While traditional pain management strategies tend to prioritise measurable reductions in pain intensity, some of these doctors appeared more focused on improvements in quality of life (D3, D6). These improvements in quality of life includes physical, emotional and social wellbeing. Through helping patients feel better overall, medical cannabis might indirectly support healthier lifestyles and improved engagement in their care.

> [...] It is not only pain that is a measure of the effect of a drug, or a medicine, but quality of life is also a legitimate measurement. [...] (Doctor 2)

4.5.4 A more holistic view of pain management

One doctor described their support for medical cannabis in relation to a more holistic view of medicine (D3). In this case, medical cannabis was not seen purely as a pharmacological tool, but

as part of a treatment philosophy focusing more on the individual's needs, patient autonomy and overall well-being. The doctor described how medical cannabis may affect multiple aspects of health that are often overlooked in conventional healthcare, such as stress, emotional balance, and sleep quality. It was also emphasised by the doctor that chronic pain patients often live with complex psychological and social challenges. This doctor saw medical cannabis as a possible tool to help address some of these overlapping aspects, which may not always be considered in traditional care models (D3).

> [...] I work with people with chronic illnesses, and they are typically people who have been fully examined in the health system. [...] A huge component in a lot of them is pain, inflammation and sleep problems. I work with holistic health. That means trying to approach the health challenges from a holistic perspective, and then all this must be addressed. [...] (Doctor 3)

4.5.5 Resistance to moralism and stigma

A final theme discussed by the doctors was the perception that resistance to medical cannabis may partly be rooted in moralism rather than evidence-based medicine (D3, D4). Two doctors suggested how the stigma surrounding medical cannabis may be shaped by political history, including the war on drugs, and cultural narratives that using cannabis is irresponsible and dangerous. They argued that the moral legacy continues to influence both policymaking and medical practice in Norway, despite an increasing international acceptance of medical cannabis (D3, D4). One doctor expressed frustration that these perceptions may make it difficult for patients to access care and for clinicians to engage in open and evidence-based discussions (D3). The stigma the doctors noted may not only affect policy, but also practical implications within the clinical setting, such as patient fear of judgement from healthcare providers.

> [...] I think there's so much moralism, from the 60s and the war on drugs and Reagan and all that stuff. But it's clear, the moralism associated with cannabis is still there and sticks with it. And when we then also think about the problems we have with good research, then it's clear that, you're in a bit of a tricky situation. [...] (Doctor 4)

These perspectives suggests that support of medical cannabis among Norwegian doctors is often driven by a combination of clinical experience, ethical reflection, and concerns regarding the current opioid-centric system. For some of these doctors' medical cannabis represents a valuable treatment option that deserves exploration and increased support within the Norwegian healthcare system (D1, D3, D6).

4.6 Barriers for Norwegian doctors'

Doctors in Norway hold an essential gatekeeping role in patients access to medical cannabis (Direktoratet for Medisinske Produkter, 2023a). However, multiple factors appear to hinder their willingness to integrate it as a treatment option. Through the interviews with doctors, six main themes were identified. Lack of information and knowledge, political and regulatory barriers, stigma and reputation, fear of professional consequences, uncertainty surrounding scientific evidence and a preference for non-pharmacological measures. Together, these themes highlight the complexity of the professional environment Norwegian doctors must navigate.

> [...] General practitioners are allowed to write a note or referral. [...] When they don't do it, I think it is about them not knowing they can. They don't know anything about cannabis treatment and don't dare to support it. But also maybe, because they are scared or cowards? [...] (Doctor 3)

4.6.1. Lack of information and knowledge

A reoccurring theme in the interviews was the doctors limited understanding of medical cannabis. Many of the doctors described a feeling of having insufficient training, a lack of evidence-based information and knowledge about medical cannabis. This gap created a sense of uncertainty for many of the doctors, especially when assessing medical cannabis as a suitable treatment option and determining how it should be prescribed. Without having sufficient evidence-based knowledge, many of the doctors felt hesitant to engage in conversations about medical cannabis, let alone

prescribe it or refer patients to other who can (D1, D2, D4, D5). The lack of clarity regarding dosage, efficacy, and effects, further deepened the uncertainty (D2). Some of the doctors expressed frustration about the lack of knowledge and awareness of other doctors and the Norwegian society when it comes to the use of medical cannabis as pain management (D3, D6).

> [...] It illustrates some deep problems that we have in medicine. One is our whole knowledge gaining system. Maybe that is the biggest problem. If you want to implement a treatment that is not a medicine that can be investigated through a randomized, double-blind trial, that does not have a sponsor behind it [...] Then you can forget about getting that medicine to the market, and that does not mean that it does not work. It just means that it does not fall under what we like to call, best practices. [...] (Doctor 3)

4.6.2 The absence of clear guidelines and support

Another barrier presented in the interviews relates to the complex legal and regulatory environment surrounding medical cannabis in Norway. Although it is legal under specific conditions, such as with referrals to other countries or from Norwegian specialists (Direktoratet for Medisinske Produkter, 2023a), most of the doctors interviewed had not prescribed or referred patients to others who can (D1, D2, D4, D5). Doctors expressed concern about navigating an unclear regulatory system, with some of the doctors having a sense of uncertainty about all the legal aspects involved (D1, D2, D5). Without institutional support or clear guidance, individual doctors are left to navigate decisions independently. This absence of guidance and clarity does not only create uncertainty but also increases the sense of personal liability. Several doctors expressed a desire for formal training, decision making tools, and increased support to help integrate medical cannabis into clinical practice (D1, D2, D4, D5).

> [...] I feel like I'm being pressured to prescribe something. At the same time, the legislation hasn't been there. There's no indication for legal registered products in Norway, and therefore it has also limited my use of it as a treatment option. [...] (Doctor 2)

> [...] I have prescribed various types of medical cannabis to chronic pain patients until a patient complained to the state administrator. It was decided that medical cannabis was experimental medicine and should be charged by the health authorities. This led to a rapid end to many prescriptions of medical cannabis in Norway. [...] (Doctor 6)

4.6.3 Stigma and reputation

One of the most frequently mentioned barriers for the doctors was stigma. Many of the doctors described a sense of worry surrounding stigma both socially and professionally. Several of the doctors emphasised a feeling of cultural taboo about medical cannabis in general, but also within the healthcare sector. Even when doctors had a neutral or positive view of medical cannabis, they often hesitated to speak openly about it due to a fear of judgement or being labelled as unconventional (D1, D2, D3, D4, D5, D6). This was particularly present among those who had prescribed or supported cannabis treatment, as they described being called “Doctor drug” or viewed with suspicion by colleagues. Such labels reinforced feelings of isolation and created additional emotional burden, even for those who believed they were acting in the patient’s best interest (D3, D6).

> [...] I think a lot of doctors in Norway are loyal to the regulatory mechanisms and for that reason steer clear of putting themselves in the spotlight [...] I was called Doctor drug one time, and it's a bit stigmatizing, so you must be able to stand by it. I think many people are reluctant for that reason. [...] (Doctor 6)

4.6.4 Fear of professional consequences

Many doctors reported a sense of fear for negative professional consequences associated with prescribing medical cannabis. Their concerns ranged from tainted reputation within the medical community to facing disciplinary actions from regulatory bodies (D3, D4, D5, D6). One of the doctors had faced disciplinary actions after referring patients to the Netherlands. This resulted in

the doctor receiving limited authorization, closure of their clinic, and is no longer allowed to work with cannabis (D3). This doctor's story received media attention and was described by other doctors as something that increased their worry surrounding medical cannabis prescription (D4, D5).

Two of the doctors who had prescribed or referred patients to the Netherlands had received nicknames, such as "the cannabis doctor" (D3, D6). One of these doctors described feeling seen as unprofessional and unconventional due to this name. The association of cannabis with recreational drug use rather than a legitimate medicine, resulted in feelings of isolation or even judgement by colleagues (D3).

> [...] It certainly doesn't contribute positively to the development. I think you get scared when you hear about people who lose their authorization and are found to be doing different things. I especially feel it as a newly qualified doctor. [...] (Doctor 5)

4.6.5 Uncertainty surrounding scientific evidence

In addition to the lack of clinical training, some doctors expressed doubts about the scientific evidence on medical cannabis. Some doctors were uncertain about how strong the current evidence was, and whether cannabis can be considered a safe and effective long-term option (D1, D2, D4). It was noted that much of the existing literature is either inconclusive or focused on short-term effects, which made them cautious. The limited knowledge about the long-term effects was a major source of uncertainty for one (D1). Others felt that the evidence was often based on patient-reported outcomes, which they viewed as less reliable (D2).

> [...] I have felt that there has not been good enough documentation that it helps enough people. We know that it relieves chronic pain somewhat based on some of the studies that have been done, but not to what extent. [...] I understand that the patients who have chronic pain, become desperate and are looking for something that works. [...] (Doctor 2)

4.6.6 Preference for non-pharmacological approaches

Another barrier that emerged from the interviews was a general preference among the doctors for non-pharmacological approaches to chronic pain management. These doctors emphasised the importance of interventions such as physical therapy, psychological support, lifestyle changes and pain programs. For them, chronic pain required more long-term focused care strategy, rather than focusing on symptom relief through medication. Within this perspective, medical cannabis was seen as another pharmacological option that risked shifting attention away from more sustainable solutions. Some doctors also expressed concern that introducing cannabis might complicate the clinical picture or encourage dependency. This underlying philosophy contributed to some of them feeling hesitant to explore or support medical cannabis as a treatment option, even when recognising patient interest or potential benefits (D1, D2).

> [...] Cannabis is not a big conversation in pain professional medical communities in Norway. I think I can just say that flat out. The big conversation is about opioids and limiting opioids. [...] A lot is on non-drug measures. The strong focus that is quite well justified professionally, combined with the strong focus on limiting opioids means that the whole discussion about cannabis comes to a stop. [...] (Doctor 1)

These findings reveal a complex set of barriers that may prevent Norwegian doctors from embracing medical cannabis as a treatment option for chronic pain. The themes of limited knowledge, unclear regulations, professional stigma, fear of consequences, uncertain scientific evidence and a preference for non-pharmacological measures all contribute to the current reluctance. These barriers are not only rooted in individual attitudes, but also reflect larger institutional gaps in support, policy and education. Clearer guidelines, improving professional training and more research, may help to reduce these hesitations and empower doctors to make well-informed decisions in collaboration with their patients.

5. Discussion

This study aimed at exploring the role of medical cannabis as a self-management tool for chronic pain patients in Norway, with particular attention to the experiences and perceptions of both patient and doctors. To address this, the study examined key sub-questions related to access, stigma, knowledge, and the impact of medical cannabis on patient well-being and autonomy.

The primary aim was to gain a deeper insight into how medical cannabis is understood, accessed, and experienced in a context where legal restrictions remain strict and clinical practice is influenced by limited guidance and training. The analysis is based on the theoretical concept of the CCM (Wagner et al, 2005), particularly focusing on respect for patient preferences and the communication of information and guidance.

The following discussion interprets the main findings considering existing literature and the theoretical framework. It also considers the implications of the results for healthcare delivery, policy and future research. Finally, it reflects on the study's limitations and outlines potential recommendations aimed at improving the integration of medical cannabis into patient-centred chronic pain management.

5.1 Interpretation of the findings

The findings of this study offer insights into how medical cannabis is experienced as a tool for self-management in chronic pain care within the Norwegian healthcare system. They also highlight the challenges faced by both patients and doctors, particularly in relation to knowledge, communication, access and stigma.

5.1.1 Self-management, autonomy and patient expertise

Patients described medical cannabis as a tool to regain a sense of control over their health, particularly when other treatment options had failed. The patients had conducted their own research, navigating the process independently and made informed decisions about the use (P1, P2, P3, P4, P5, P6). The narratives reflect strong elements of self-management support as outlined in

the CCM, particularly in terms of patients taking an active role in managing their condition (Wagner et al., 2005). However, the burden of initiating and sustaining this treatment often fell entirely on the patients. This reflects a situation where self-management occurs outside the formal care structure, signalling an absence of professional support and educational tools, key aspects of the CCMs idea of collaborative care (Wagner et al., 2005).

This dynamic both supports and challenges existing literature. While studies such as a study conducted by Lucas et al. (2021) highlight the potential of medical cannabis to support quality of life and reduce reliance on opioids, the findings here also underscore the uneven support systems surrounding medical cannabis in Norway (Lucas et al., 2021). Rather than being embedded within a structured care process, medical cannabis use often occurs despite the system, not due to it.

5.1.2 Stigma, communication and fragmentation of care

Stigma emerged as a major barrier for both patients and doctors. Patients and doctors expressed fear of being judged, misunderstood, or receiving drug-related labels (P1, P2, P3, P4, P5, P6, D1, D2, D3, D4, D5, D6). Several of the patients reported feeling judged and not taken seriously when discussing medical cannabis with healthcare providers (P1, P2, P3, P4, P5). Stigma within the clinical setting may shape the patient-provider dynamics, also in conversations about medical cannabis, possibly making these conversations more challenging and uncomfortable for both parts.

In terms of the CCM, stigma undermines the foundation of productive patient-provider interactions (Wagner et al., 2005), as it may hinder effective communication, damage trust, and limit opportunities for collaborative care. This does not only impact self-management support but also affects how patients perceive their own legitimacy and autonomy in the care process (Schmittdiel et al., 2008). Moreover, stigma disrupts the productive interaction between informed and activated patient, and prepared and proactive team, that the CCM identifies as outcomes of successful chronic care (Wagner et al., 2005). While the patients in this study were proactive in bringing up medical cannabis, the presence of stigma contributed to a more fragmented and emotionally charged care experience.

5.1.3 Access barriers and delivery system design

A central issue in the findings was the inconsistent and often fragile access to medical cannabis. Patients described notable variations in the willingness of doctors to prescribe, a lack of clear referral pathways, and substantial obstacles related to travel and pharmacy support. For some, access depended on the personal knowledge, willingness of individual doctors, or relying on illegal pathways to obtain treatment (P1, P2, P3, P4, P5). These findings highlight gaps in the delivery system design component of the CCM, which emphasizes the importance of structured and coordinated care (Wagner et al, 2005).

The systems failure to provide a consistent framework for medical cannabis access left many patients navigating a confusing and sometimes contradictory process. Even when prescriptions were granted, they could be revoked without warning, as seen in one case where a new physician discontinued care (P1). This inconsistency not only increased patient stress, but also undermined the stability needed for effective chronic care management (Coleman et al., 2009). This highlights how fragile and inconsistent access may be, even for patients who actively advocate for themselves and receive initial medical support. This lack of a structured care pathway for medical cannabis reveals a weakness in how delivery systems are organised, resulting in care that is reactive and individual rather than proactive and standardised.

5.1.4 Financial and legal burdens

In addition to clinical and regulatory barriers, patients described considerable financial and legal obstacles. The high cost of medical cannabis, ranging between several thousand NOK per month, was often restrictive and required sacrifices in other areas of life (P1, P2, P3, P5, P6). These challenges are not simply economic, but structural, and reflect a broader issue in how medical cannabis is positioned within the Norwegian health system.

The unequal access raises important ethical concerns. The current position of medical cannabis outside the regular reimbursement structure results in only patients with sufficient financial resources to consistently afford this treatment (Direktoratet for medisinske produkter, 2023b). In this way, the current system unintentionally creates class-based disparities, where the more well-

off patients may pursue this medication while others are left behind. As such, medical cannabis becomes a treatment option that is not only based on medical need, but on economic status, introducing a form of classism into a system that aspires for equity. This contradicts with core principles of the CCM, which advocates for fair self-management support and patient centred care (Wagner et al, 2005).

Furthermore, patients reported losing their drivers licences, receiving drug-related diagnoses, or being questioned by child protective services, even when following legal procedures (P1, P2, P3, P4, P5, P6). These consequences do not only disrupt their daily life but also contribute to a sense of being criminalised for pursuing a treatment that works for them. These findings reflect how external legal and financial structures can directly impact the self-management opportunities of patients. From a CCM perspective these findings show how self-management support cannot be achieved if policy and regulatory environments undermine patient stability and autonomy (Wagner et al, 2005).

5.1.5 Knowledge gaps, decision support and misinformation

One of the key themes that emerged through the interviews was the lack of knowledge among doctors. Some doctors reported being unfamiliar with medical cannabis, hesitant to prescribe it, or were uncertain about its legal status (D1, D2, D4, D5). This aligns with earlier research showing that physician hesitancy and limited education are major barriers to medical cannabis access in Norway (Arnfinsen & Kisa, 2020). From the perspective of the CCM, this reflects a breakdown in decision support. When providers lack up-to-date knowledge and information, or feel unsupported in navigating medical cannabis related decisions, it limits their ability to engage in shared decision-making with patients (Convery et al., 2019).

At the same time, some doctors acknowledged their own uncertainty but expressed openness to learn more and support the use of medical cannabis in pain management (D1, D2, D4, D5). This suggests a potential shift towards a more collaborative approach, in line with the CCMs emphasis on team-based care and informed decision-making (Wagner et al, 2005). However, the lack of decision support tools, such as guidelines, training or information, makes this collaboration fragile and dependent on individual initiative rather than systematic design. This points to a need for

greater recognition of patient-reported outcomes in chronic pain care, as well as a need for more flexible prescribing guidelines.

Beyond individual uncertainty, misinformation from institutional sources also contributes to the knowledge gap, further complicating clinical decision-making. According to Akershus universitetssykehus (N.D)[1] chronic cannabis use has been associated with a potential increase of certain cancers, heart rhythm disorders, and chronic obstructive pulmonary disease. However, evidence suggests that medical cannabis use is not correlated with an increased risk of cancer (National Academies of Sciences, Engineering, and Medicine, 2017). The risks listed by Akershus universitetssykehus, may instead be related to the inhalation of smoke, rather than the medical use of cannabis itself. This distinction is not clarified in their statement, which may contribute to the spread of misinformation and stigma regarding the health risks of medical cannabis.

5.1.6 Uncertainty, support and structural challenges

The perspectives of doctors in this study reveals a complex landscape of professional uncertainty, personal beliefs, and institutional limitations. While several doctors expressed support for medical cannabis as a potential alternative to opioids or other conventional treatments, this openness was often tempered by a lack of formal training and clinical guidelines (D1, D2, D4, D5). This scientific uncertainty, combined with the pressure to practice evidence-based medicine, may lead some doctors to avoid medical cannabis in favour of better documented treatment options, even when patients reported benefitting from cannabis use. The absence of guidance contributed to hesitancy and inconsistent prescribing practices, reinforcing what the CCM identifies as a gap in decision support (Wagner et al, 2005). These limitations also hinder delivery system design by introducing variability and reinforcing a culture of caution rather than collaborative risk-sharing.

Doctors also highlighted the professional risks of engaging with medical cannabis. Some doctors described concerns about how colleagues or institutions might perceive their involvement, reflecting a feeling of stigma within the medical community itself (D1, D2, D3, D4, D5, D6). This

[1] This website was accessed on 25 February 2025. The page containing the information about medical cannabis has since been removed from Akershus Universitetssykehus website.

form of internal stigma may discourage collaboration and suppress open discussions, further isolating patients and limiting the potential for evidence-based integration of medical cannabis into chronic pain care. However, a few doctors in the study actively pursued international training, new research and expressed a desire for broader policy reform (D3, D4, D6). These perspectives suggest that despite limitations, there is a growing willingness within the medical field to re-evaluate the role of medical cannabis in patient-centred care, particularly when patient-reported outcomes indicate improved quality of life and reduces reliance on other medications (Lucas et al., 2021).

5.1.7 Implications for the Chronic Care Model

The findings of this study suggest that while the CCM offers a useful framework, certain barriers are not fully captured. Patients' reliance on informal networks, including peer communities and self-directed research, highlights a gap in formal self-management support. Inconsistent access and legal restrictions challenge the CCM`s assumption of structured delivery system design (Wagner et al., 2005). Additionally, stigma, fear of criminalisation and judgement, and lack of decision support due to absent clinical guidelines, limit both patient autonomy and provider confidence. These results suggest the need for an expanded interpretation of the CCM, that explicitly incorporates social, legal and economic determinants of access and legitimacy (Wagner et al., 2005). The study also highlights the importance of including emotional well-being, identity, and patient-defined functionality as key outcomes of care. Incorporating these insights may enhance the model's relevance in contexts where emerging treatments, such as medical cannabis, remain legally and culturally challenged.

5.2 The study's contribution

This study expands the application of the CCM by exploring its relevance in the context of medical cannabis use in Norway, a setting where access is limited, and the treatment remains controversial. By focusing on self-management support and decision support, the study highlights how the CCM can be used to understand patient and provider experiences in areas of care (Wagner et al., 2005). The findings show that while patients actively engage in managing their condition, and some doctors are open to supporting them, there is a lack of system-level guidance and knowledge. This highlights a disconnect between patient behaviour and institutional preparedness and shows how the CCM may serve as a diagnostic tool for identifying gaps in care delivery. These results

demonstrate the value of the CCM in identifying where current healthcare practices could be strengthened to better support chronic pain patients (Wagner et al, 2005).

Additionally, the study contributes to the understanding of patient-centred care, particularly regarding autonomy and stigma. Many patients described medical cannabis as a tool to reclaim control over their health and daily life, reflecting strong elements of autonomy and self-managed care (Wagner et al., 2005). However, both patients and doctors reported stigma, ranging from social judgement to professional consequences, which limits open communication and undermines trust. These findings suggest that the principles of the CCM, especially collaborative care, shared decision-making, and mutual respect, are difficult to practice when stigma shapes clinical interactions (Wagner et al., 2005). These insights are relevant for healthcare providers, policymakers, and administrators, as they point to the need for training, clearer guidance, and policy change to support more consistent and compassionate care.

This study offers timely evidence in the context of Norwegian health policy, particularly in chronic pain, alternative treatments, and patient rights. By emphasizing the experiences of patients and doctors, it helps illustrate the treatment gap faced by chronic pain patients and suggests practical areas for improvement in both practice and policy. The study also adds to broader institutional debates about how healthcare systems integrate emerging treatments under conditions of regulatory uncertainty, social resistance, and medical conservatism.

5.3 Limitations

This study has limitations that should be considered when interpreting the findings. First, the sample size was small, consisting of six chronic pain patients and six doctors. While this is acceptable for a qualitative study aiming to explore in-depth experiences, its limits the width of perspectives and may not capture the full diversity of perspectives across different clinical and geographical settings.

Second, the use of purposive sampling. While methodologically appropriate for qualitative research aiming to explore in-depth experiences, it also limits the transferability of the findings.

The participants were selected based on relevance to the research questions rather than representativeness of the broader population. As a result of this, the sample may not fully reflect the range of perspectives that exists across the Norwegian population. This study focused on chronic pain patients and doctors, and did not include the perspectives of other key stakeholders such as policymakers or regulatory authorities, which may have restricted the ability to fully explore systematic and institutional barriers.

Third, the voluntary nature of participation introduces a risk of self-selected bias. This may lead to individuals with particularly strong views, either supportive or critical of medical cannabis, to be more inclined to participate, potentially skewing the findings. As a result, the findings may reflect more engaged or motivated voices, while those with more neutral or opposing views might be underrepresented. While steps were taken to ensure diversity within the sample, for example through variations in patient age, doctor backgrounds and level of knowledge of medical cannabis, the sample size remained small and may limit the perspectives represented.

Fourth, the qualitative nature of the study means that the results offer detailed, contextual insights rather that statistical generalisations. The aim was not to measure outcomes, but to understand how patients and doctors perceive and experience the use of medical cannabis within the Norwegian healthcare system. While the findings provide valuable insight into individual experiences and broader systematic challenges, they should be interpreted within the scope and context of qualitative research.

Lastly, the sensitive and sometimes stigmatised nature of the topic, may have influenced the openness of responses, despite assurances of confidentiality in the interviews. These limitations emphasize the need for future research to include a wider range of stakeholders and consider complementary methods, such as surveys, to build on and investigate the findings presented in this study. Despite these limitations, the study offers important insights into an area of healthcare that remains underexplored in Norway.

5.4 Future research

While this study provides valuable insights into the experiences of chronic pain patients and doctors regarding the use of medical cannabis in Norway, several questions remain unanswered. Future research could benefit from exploring the perspectives of other key stakeholders, such as policymakers, pharmacists, and health administrators, whose roles are crucial in shaping access, regulation and clinical implementation. Including these voices may offer a more comprehensive understanding of the systematic and structural facilitators and barriers surrounding medical cannabis.

In addition, there is a need for longitudinal research that assesses both the long-term effects and potential side effects of medical cannabis use in chronic pain management. Such research could contribute to more robust clinical evidence base and help inform both patients and healthcare professionals about the safety and efficacy of cannabis as a self-management tool. Additionally, policy analysis is needed to evaluate how current regulatory frameworks influence patient access, prescribing practices, and broader public health outcomes.

There is also an opportunity to investigate how the components of the CCM may be adapted or expanded to account for the challenges associated with integrating treatments that are both legally and socially challenged (Wagner et al., 2005). Overall, future research should aim to build a broader evidence base that supports informed policy development, enhances patient care, and ensures a more integrated approach to the use of medical cannabis in chronic pain management.

5.5 Ethical considerations

This study followed ethical guidelines by obtaining informed consent, protecting participants anonymity, and securing ethical approval (appendix 6). However, the interviews raised some ethical issues that extend beyond the research process itself.

Some patients, despite using medical cannabis legally, described feeling criminalised or judged, by society, healthcare providers, and even family members (P1, P2, P3, P4, P5). When a legal treatment remains stigmatised, patients are placed in a vulnerable position, often hesitant to seek

help or speak openly about their care. Some also described resorting to illegal sources due to barriers in the healthcare system, raising concerns about safety, legality, and equity (P1, P5). Unequal access, shaped by individual doctors' attitudes and patients' financial means, challenges the principle of justice in healthcare, where all patients should have fair access to safe, effective, and evidence-informed treatment.

The findings also reveal an ethical tension between medical authority and patient experience. Several participants felt dismissed when discussing treatment options, despite extensive lived experiences of chronic pain (P1, P2, P3, P4, P5). This challenges the principle of respect for autonomy and highlights the need for clinical decision-making that includes patients voices and values (Wagner et al., 2005). One participant was formally diagnosed with cannabis dependence syndrome despite legal use, which later limited their access to mental health services (P4). Such labelling, especially without clear diagnostic standards or support, may reinforce stigma and break trust in the healthcare system.

Finally, it is important to reflect on the ethical responsibility I held as a researcher. These interviews often touched on painful and personal experiences. I was aware that participants were trusting me with stories that may not be easy to share. Beyond ensuring anonymity and consent (appendix 6), I saw it as my obligation to represent their voices with honesty, care and integrity. Sharing these stories carries a responsibility, not just to meet academic standards, but to honour the people behind them as well.

5.6 Recommendations

The results demonstrated that while the patients included in this study experience benefits from medical cannabis, a range of structural, clinical, and social barriers complicate access and limit its integration into Norwegian healthcare practice. These recommendations are based on the lived experiences of patients and doctors, and they are rooted in the principles of person-centred care and the CCM (Wagner et al., 2005). The recommendations are divided into two main sections, recommendations for clinical practice and recommendations for policy development. Together, they seek to contribute to a more informed, equal, and responsive approach to chronic pain

management. They also highlight the need to strengthen core elements of the CCM, such as decision support, delivery system design, and self-management support, to create a more functional and fair chronic care structure (Wagner et al., 2005).

5.6.1 Clinical practice

Provider knowledge and training

The findings of this study reveal a knowledge gap among the doctors regarding medical cannabis, its effect and the use of it in chronic pain management. While some of the doctors had proactively found information, most had limited knowledge and exposure to the topic in their medical education or in clinical training. Integrating formal education on medical cannabis into medical and clinical training would provide doctors with a more robust understanding of its potential, limitations and risks. Doing so would strengthen the decision support component of the CCM and reduce inconsistencies in how medical cannabis is discussed and perceived (Wagner et al., 2005). Formal training on the topic may contribute to a more consistent knowledge base among doctors, fostering more informed and balanced conversations about medical cannabis.

Evidence-based clinical guidelines

In addition to education and training, there is a need for clear and evidence-based clinical guidelines. The current absence of such tools contributes to inconsistent practices and doctor hesitancy. Developing national guidance could offer support in assessing patient suitability for medical cannabis, ensuring that decisions are based on clinical evidence and patient-specific needs rather than personal attitudes or assumptions. This would directly address the current weakness in decision-making support identified in this study, enabling doctors to make more confident, transparent and fair treatment decisions.

Focusing on patient-centred communication

The role of the doctors goes beyond prescribing medications, it also involves listening, guiding and validating patient experiences. Encouraging open conversations about alternative treatment approaches, including medical cannabis, may help reduce stigma and foster trust. This aligns with the broader principles of person-centred care and the CCM, supporting patient autonomy and

shared decision-making in managing chronic pain. Improving patient-provider communication would enhance the CCMs aspect of productive interactions between informed patients and prepared teams, helping to reduce the emotional burden currently carried by patients navigating controversial care pathways (Wagner et al., 2005).

5.6.2 Policy development

Access criteria and regulatory frameworks

Although medical cannabis is legal in Norway, access remains limited and uneven (Direktoratet for Medisinske Produkter, 2023a). The current framework depends largely on individual doctors' willingness to prescribe and is further restricted by narrow eligibility criteria. Several patients in this study described feeling dismissed despite having legitimate medical needs (P1, P2, P3, P4, P5). Revising the existing framework to allow for broader and more equal access could address some of these inconsistencies. Taking inspiration from countries like Denmark, where clearer regulatory structures exist, Norway could benefit from a re-evaluation to support more equal and consistent care.

Considering a pilot program

The Danish experience with medical cannabis offers a relevant example for how a more structured and evidence-based approach could be introduced in Norway. Denmark's pilot program provided patients with legal and supervised access to medical cannabis while collecting data on outcomes, side effects, and prescribing practices (Indenrigs- og sundhedsministeriet, 2024a). A similar approach could be valuable in Norway, allowing for a controlled and gradual expansion of access.

This would also serve as a tool for strengthening the clinical information systems component of the CCM by gathering systematic data to guide practice (Wagner et al., 2005). By piloting medical cannabis use within a defined framework, it would be possible to better understand its role in chronic pain management, particularly for patients who are lacking other treatment options. A Norwegian pilot program could also help reduce the reliance on informal access routes, while supporting the development of clinical guidelines and provider training. Involving patients,

doctors, and researchers in the planning and implementation of the program would help to ensure that it remains grounded in both clinical relevance and lived experiences.

Addressing financial barriers

Financial strain emerged as one of the most mentioned barriers among the patients that were interviewed. Out-of-pocket expenses reaching several thousand kroner per month made the treatment difficult or impossible for many. While some attempted to apply for financial assistance, the process was often unclear and difficult. This reflects an equity gap in system design, which the CCM warns against when access is limited by affordability rather than need (Wagner et al., 2005). Including medical cannabis in reimbursement schemes could help reduce this barrier. Doing so would also acknowledge medical cannabis as a legitimate treatment option, aligning policy with the needs and realities of patients living with chronic pain.

Improving legal clarity for patients

Many patients described an underlying fear of being penalised for using medical cannabis, even when doing so legally. Instances of lost driver's licences, increased police attention and concerns about how medical cannabis appeared in their medical records, all contributed to a sense of insecurity. This legal uncertainty breaks with the health system organisation component of the CCM, where policies should support, and not contradict with clinical care (Wagner et al., 2005). These experiences suggest a need for greater legal clarity around what rights patients have when using medical cannabis under medical supervision. Ensuring that regulations are better communicated, consistently enforced, and aligned with clinical practice may help reduce this uncertainty and allow patients to feel more secure and safe in their treatment choices.

Including patient perspectives in future policymaking

Patients with lived experiences of chronic pain and medical cannabis hold important insights into both the facilitators and the barriers of the current system. However, they are not always included in discussions that shape those systems. Involving patients in future policymaking, along with doctors, researchers and legal experts, could help ensure that reforms are grounded in practical realities.

This aligns with the CCMs goal of a patient-centred approach that prioritises user experiences when designing care models (Wagner et al., 2005). Their perspectives are particularly valuable when designing access frameworks, evaluating treatment outcomes, and defining ethical and legal safeguards. Including those directly affected by policy decisions would also help promote trust and transparency in an area marked by stigma and controversy. The inclusion of patient perspectives also helps promote patient-centred care, and make the patients feel more involved and heard in the healthcare sector.

The recommendations presented reflect the complexities and contradictions surrounding the use of medical cannabis for chronic pain in Norway. While the potential therapeutic value is recognised by many, the fragmented access, legal uncertainty, financial burden, and lack of clinical guidance create a system that patients often must navigate on their own. This contrasts to the CCMs vision of coordinated, team-based, and proactive chronic care delivery (Wagner et al., 2005). Improving this situation requires coordinated efforts across clinical training and policy development. By addressing knowledge gaps, revising frameworks, and ensuring that patient experiences are taken seriously, Norway can develop a more inclusive and balanced approach to chronic pain management. One respecting both clinical evidence and the lived realities of those affected. These changes are not only necessary for expanding access to medical cannabis where appropriate, but also for strengthening person-centred and evidence-based care.

6. Conclusion

The aim of this study was to explore how chronic pain patients and doctors in Norway experience and percieve the use of medical cannabis as a pain management tool. Through qualitative interviews, it became clear that while medical cannabis is not a one-size-fits-all solution, it has meaningful potential for some patients, especially in improving pain levels, sleep quality, emotional well-being, and everyday functioning. However, these benefits are often overshadowed by structural barriers. Access is limited, expensive, and heavily stigmatised, leaving many patients feeling abandoned by a system that is meant to support them. Several of the patients shared how they were forced to become their own advocates, researchers, and in some cases even rule-benders,

navigating unregulated spaces, travelling abroad, or relying on illegal markets to get the medication they feel works best for them.

On the other side of the consultation room, doctors expressed openness to the idea of medical cannabis but often found themselves in an uncertain and unsupported position. A lack of clinical guidelines, limited training, and fear of professional consequences made many hesitant to engage with cannabis as a treatment option. This created a disconnect between patient needs and what the healthcare system currently allows for, fuelling frustration on both sides of the consultation room. This mismatch points to deeper systematic issues in how emerging treatments are evaluated, integrated and communicated within chronic care delivery.

By applying the CCM, this study highlighted key gaps in how chronic pain care is organised in Norway, particularly in the areas of self-management support and decision making (Wagner et al., 2005). Medical cannabis use exists in a grey zone, not fully embraced, not fully understood, and not fully integrated into the care. Patients and providers are left to navigate this space with limited guidance, and this uncertainty has real consequences for quality of care. The findings suggest that Norway's current system underperforms not only in clinical responsiveness but also in delivering on the CCMs core principles of informed patients, prepared teams, and system-level coordination (Wagner et al., 2005).

Ultimately, while medical cannabis is not a miracle cure, it is a meaningful part of the puzzle for some of the people living with chronic pain. Its potential should not be dismissed, neither should the voices of those who find relief in it. If Norway wants to move towards a more responsive and person-centred approach to chronic pain management, there is a clear need to address the regulatory, educational, and cultural barriers that currently stand in the way. This means integrating medical cannabis more thoughtfully using the CCMs principles, through formal training, clearer guidelines and supportive care that aligns with patient realities, shifting towards more open, stigma-free conversations around chronic pain and alternative pain management options (Wagner et al., 2005). Medical cannabis is not just about a substance, it is about equity, legitimacy and care structures that adapt to patients. It is about autonomy, dignity and the right to be taken seriously in the search for a better quality of life.

7. List of abbreviations:

ACIC – assessment of chronic illness care

CBD – cannabidiol

CCM – Chronic Care Model

ECDD – expert committee on drug dependence

MC – medical cannabis

NSAIDs – non-steroidal anti-inflammatory drugs

SMS – self management support

THC – delta-9-tetrahydrocannabinol

UN – United Nations

WHO – World Health Organization

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9. Appendices

Appendix 1: Declaration of AI-utilization

Declaration of the use of generative AI and AI-assisted technologies/tools:

The author(s) declare the utilization of AI-enabled tools to develop the academic work submitted together with this disclaimer and the proof/documentation of use in the appendix. The author(s) assume full responsibility for the content of the said submission and have done due diligence to verify the credibility, authenticity, factuality (or equivalent) of the content. All arguments, findings, interpretations, and conclusions etc. presented in the academic work are those of the author(s). The author(s) will be able to supplement his/her/their submission with earlier/original drafts developed prior to the application of the relevant AI-tool(s) upon requested.

Anna Kristine Solheim

Name(s) & Signature(s) of author(s)

16.05.2025

Date (dd.mm.yyyy)

Table 3: Use of AI within research

(a) AI-enabled tool(s)	**(b) Purpose of use / type of support**	**(c) Contribution of the AI-enabled tool to submitted work**
ChatGPT	- Rephrasing of sentences - Grammar checking - Brainstorming	ChatGPT was used as a tool to ensure academic and understandable writing, by rephrasing sentences for better flow and checking for grammatical errors. Additionally, it was used as a brainstorming partner to reflect ideas and aspects of the topic, to ensure well rounded and reflected writing.
AI assistant MAXQDA	- Transcribe the interviews	The AI assistant in MAXQDA was used to transcribe the interviews. The researcher proofread the transcripts to ensure accuracy, before they were interpreted.

Appendix 2: Interview request (translated to English)

Dear ***,

My name is Anna Kristine Solheim. I am currently studying a European master's in health economics and management, and I am now writing my master thesis at the Management Center Innsbruck (MCI) in Austria. In my master thesis I am exploring the facilitators and barriers for chronic pain patients and doctors in Norway when it comes to the use of medical cannabis as a pain management tool. I am therefore interviewing both doctors and chronic pain patients, to hopefully achieve a wide range of experiences and thoughts on medical cannabis as a pain management tool for chronic pain in Norway. The patients will be contacted through two patient organisations and possibly with referral from other chronic pain patients interviewed for the study. The doctors are contacted through hospitals, doctor associations, clinics, and possibly from referrals by other doctors or patients interviewed.

Before you decide if you wish to participate in this study, it is important that you are aware of why the study is being conducted as well as what a possible participation would involve. All interviews and participants will be anonymised to all expect to the researcher (Anna Kristine Solheim). Please read the attached information carefully. Feel free to ask questions if something is not clear or if more information is wanted. Attached is an explanation of the study and what a possible interview would involve (appendix 3). A consent form will be sent if you wish to participate in the study (appendix 6).

Your answers could have great meaning for this study.

Thank you in advance.

Kind regards,
Anna Kristine Solheim
Email ***
Mobile number ***

Appendix 3: Information attached in the interview request (translated to English)

Master thesis: medical cannabis for chronic pain patients

The aim of this study is to explore the facilitators and barriers that patients and doctors experience in relation to the use of medical cannabis. I have chosen to research this topic because chronic pain greatly affects quality of life, and many patients therefore seek alternative treatments. Medical cannabis is considered as a potential pain management tool, but its use is still highly regulated in Norway, and there are differing opinions on the risks, benefits and availability of medical cannabis. The result of this study may provide insight into the reasons behind these varying opinions on the treatment method and possibly explain what might be needed to possibly change the current system.

To gain perspectives from both chronic pain patients and doctors, I will conduct interviews to gain a better understanding of:

- Experiences, views/opinions, and obstacles related to the use of medical cannabis as a pain management tool for chronic pain.
- Factors that influence doctors' willingness to discuss and/or support the use of medical cannabis.
- What existing regulations and healthcare practices affect access to medical cannabis in Norway.

If you wish to take part in this study, it will involve participating in an online interview with me, conducted through Teams. The interviews will be recorded with your consent. It is important for me to emphasize that participation in the interviews is entirely voluntary. All responses will remain confidential and anonymised in my master thesis. The interviews will last approximately 30-45 minutes, and you are completely free to skip questions or withdraw from the study. If you withdraw from the study within two weeks after the interview has taken place, I will not include the interview in the study, and the recording will be deleted.

All data and personal information collected from you will be stored in a password-protected area and will only be accessed by me (Anna Kristine Solheim). All data will be anonymised, and the recordings will be deleted after transcription has been completed. The anonymised transcripts will be available only to me, my supervisor and other staff evaluating the study and/or the data. If you would like a copy of the transcription of your interview, you can contact me to request it. All information generated by the project will be stored in accordance with the requirements of the General Data Protection Regulation (GDPR) and MCI`s research ethics committee standards. Any publications or presentations resulting from this project will not identify you by name but instead use pseudonyms.

Please make sure you have read this entire information sheet and are confident that you understand all parts of the research project. If you have any questions and are willing to participate, please fill out the consent form and return it to me (appendix 6). I will then get in touch and arrange the interview.

If you have any questions along the way, or would like more information about the research, please feel free to contact me by email ***, or by phone on the number ***.

Thank you very much for your time.

Appendix 4: Interview guide patients

Introduction
- Greeting - Small introduction of researcher - Information about the aim of the study - Start recording and make the interviewee aware of it
About the interviewee
- The interviewee tells a little bit about themselves - Patient history and history of living with chronic pain - Pain management tools they have used/tried - How the pain affects them in everyday life
Experience with medical cannabis
- Introduction to medical cannabis - Experience using medical cannabis - Motivation to try it - Possible factors pushing against using medical cannabis - How they are accessing medical cannabis - Comparison of medical cannabis to other pain management strategies
Their experience using medical cannabis
- Their experience with talking to healthcare professionals about medical cannabis - Possible barriers to using medical cannabis - Possible facilitators to using medical cannabis
Medical cannabis effect
- Aspects affected my medical cannabis, also to what extent - Side effects
Other
- The interviewee is free to talk about other aspects connected to chronic pain or medical cannabis
Outro
- Additional points that may not have been addressed yet - Thank the interviewee for their time and answers - End the recoding

Appendix 5: Interview guide doctors

Introduction
- Greeting - Small introduction of researcher - Information about the aim of the study - Start recording and make the interviewee aware of it
About the interviewee
- The interviewee tells a little bit about themselves - Their experience with chronic pain patients - Their experience with medical cannabis - What pain management tools are they most familiar with using
Experience with medical cannabis
- Familiarity and knowledge about medical cannabis (and endocannabinoid system) - Thought on the use of medical cannabis for chronic pain - Have they prescribed medical cannabis or referred patients to others who may - Possible comparison between medical cannabis and other pain management tools - Experiences of chronic pain patients and medical cannabis - Have they experienced barriers connected to medical cannabis
Their thoughts on the topic
- Factors that may affect their opinion of medical cannabis - Knowledge and training on medical cannabis - Understanding of the current regulations - Barriers affecting their position on medical cannabis
Other
- The interviewee is free to talk about other aspects connected to chronic pain patients or medical cannabis
Outro
- Additional points that may not have been addressed yet - Thank the interviewee for their time and answers - End the recording

Appendix 6: Consent form (translated to English)

Authors own draft based on template from MCI4me (N.D.)

MCI consent form

TO BE SIGNED/ACCEPTED BY RESEARCH PARTICIPANTS

Please read and tick the boxes		Tick box
1.	I confirm that I have read and understood the information regarding participation in the study. I have been given the opportunity to review the information, ask questions, and have received satisfactory answers.	☐
2.	I understand that participation in the study is voluntary and that I am free to withdraw at any time during my participation in this research project and within two weeks of participating in the research project, without giving any reason. If I withdraw within two weeks of participating in the research project, my data will be removed.	☐
3.	I understand that any information provided by me may be used in future reports, academic articles, publications or presentations by the researcher, but my personal information will not be included, and I will not be identifiable.	☐
4.	I understand that my name/any identifying information will not appear in any reports, articles or presentations without my consent.	☐
5.	I understand that data from all interviews that are audio recorded and/or transcribed will be protected on password protected devices and kept secure.	☐
6.	I understand that I can contact the researcher afterwards if I wish to receive a copy of any publications resulting from the research.	☐
7.	I understand that data will be stored in accordance with MCI's policies.	☐
8.	I agree to the use of the anonymized data in possible future research projects (optional)	☐

Name of participant: .....

Date: .....

Signature: .....

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MCI ETHICS ASSESSMENT

Appendix 7: Coding table

Main code	Subcode	Subcode	Chronic Care Model (Wagner et al., 2005) component	Inductive or deductive	Coding rule
Patients	How they learned about it	Patient communities, Own research, and Friends and family	Self-management support as they are examples of informal self-management learning sources.	Inductive	Code when patients explain how they learned or heard about medical cannabis for the first time and use subcodes to differentiate between the different ways (patient communities, own research, and friends and family).
Patients	Patient history	Other pain management strategies	Self-management support as it reflects patients experience managing their condition.	Inductive	Code when patients talk about their patient history, including timeline, diagnosis or type of pain, and use subcode (other pain management strategies) when the patients talk about different pain

					strategies they may have tried.
Patients	Positive effects		Self-management support as it is outcomes of self-management strategies.	Deductive (National Academies of Sciences, Engineering, and Medicine, 2017), (Whithing et al., 2015), (Wasan et al., 2025) and (Safakish, et al., 2020)	Code when patients discuss the positive effects they have felt/had as a result from medical cannabis.
Patient	Other effects		Self-management support as it is outcomes of self-management strategies.	Inductive	Code when patients explain other effects (both more neutral and negative) connected to the use of medical cannabis.
Patients	Access to it	Travel, Norwegian pharmacies, and Illegal	Delivery system design as it related to system-level access barriers, and self-management support as it may reflect proactive patient behaviour.	Deductive for travel (Direktoratet for Medisinske Produkter, 2025), and Norwegian pharmacies (Direktoratet for Medisinske Produkter, 2023a), but inductive for illegal.	Code when patients explain how they get medical cannabis or how they have gotten it before. Differentiate between the different access pathways using the subcodes (travel, Norwegian pharmacies, and illegal).

Patient	Healthcare system		Delivery system design as it relates to the structure of the healthcare system.	Inductive	Code when patients discuss their experience or view of the healthcare system.
Patient	Barriers	Money, Legal restrictions, and Social	Delivery system design as systematic issues reflect barriers in the system, and self-management support as this might be hindered due to the barriers.	Inductive	Code when patients discuss the different barriers in access to medical cannabis and use subcodes to differentiate (money, legal restrictions, and social).
Patient	Other aspects		This may connect to different parts of the CCM as various aspects may be presented here.	Inductive	Code when patients discuss possible other aspects connected to medical cannabis or chronic pain.
Reflections	Changes needed		Connects to many aspects within the chronic care model, but especially self-management support and delivery system design.	Inductive	Code when patients and/or doctors reflect over the role of medical cannabis and use subcode (changes needed) when they reflect over what changes are needed to make medical cannabis`s

					role in Norway bigger.
Patient initiative			Self-management support as the patients are taking on proactive roles.	Inductive	Use code when patients and doctors discuss experiences of patients taking initiative to try medical cannabis.
Doctors	Information and knowledge	Endocannabinoid system	Delivery system design as it reflects a need for system-level decision support and training.	Deductive (Arnfinsen and Kisa, 2020)	Code when doctors discuss their level of information and knowledge about medical cannabis and use subcode (endocannabinoid system) when the system is specifically discussed.
Doctors	Healthcare system	Doctor experiences	Delivery system design since this component is about how the healthcare system is built up.	Inductive	Code when doctors discuss how the healthcare system is set up in Norway and use subcode (doctor experiences) when talking about their experiences connected to this and medical cannabis.

Doctors	Other pain management tools		Delivery system design as it involves what tools the system offers and supports.	Deductive (Norsk legemiddelhåndbok, 2023), (Bachhuber et al. 2014).	Use this code when doctors discuss other pain management tools that may be used or are being used by chronic pain patients.
Doctor	Barriers	Money, Doctor hesitations, and Consequences related to support and prescription of medical cannabis	Delivery system design as it reflects professional concerns shaped by the system design.	Inductive for money and consequences, but deductive for doctor hesitations (Indenrigs- og sundhedsministeriet, 2024a), (Arnfinsen and Kisa, 2020)	Code when doctors reflect over the barriers for them to prescribe medical cannabis in Norway, and use subcodes (money, doctor hesitations, consequences related to support and prescription of medical cannabis).
Doctor	Positive aspects	Opioid limitation, and Quality of life	Delivery system design for opioid limitation as it includes system efforts to shift away from opioids, and self-management support for quality of life as this is a key goal of it.	Deductive, opioid limitation (Lucas et al., 2021) and (Bachhuber et al. 2014), and quality of life (Safakish, et al., 2020).	Code when doctors discuss the positive aspects of using medical cannabis for pain management and use subcodes (opioid limitations, and quality of life) when it is specifically mentioned.