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Formation and Maintenance of Resilience in People with Chronic Musculoskeletal Pain

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Table of Contents

Abbreviations used in the Thesis	4
Introduction	5
Aim of the Thesis	6
Tasks of the Thesis.....	6
Novelty of the Thesis	8
1 Literature review	10
1.1 Theoretical overview of the concept of “resilience”	10
1.2 Characteristics of musculoskeletal pain and its impact on patients’ quality of life	11
1.3 The importance of resilience in people with CMP.....	12
2 Methods.....	14
2.1 Researcher’s position and reflexivity.....	14
2.2 Research strategy and design	14
2.3 Participants and procedure.....	15
2.4 Data collection methods.....	16
2.5 Data analysis methods.....	18
2.6 Trustworthiness.....	19
2.7 Description of integrated data analysis procedure	19
2.8 Ethical considerations	21
3 Results.....	22
3.1 RQ1: The development of resilience.....	22
3.2 RQ2: Factors influencing the development of resilience	22
3.3 RQ3: Changes in resilience.....	23
3.4 RQ4: Manifestation of resilience in long-term	24
3.5 RQ5: Factors influencing resilience in the long term.....	25
3.6 RQ6: Resilience in people with CMP who use wheelchairs	26
Discussion.....	27
Conclusions	33
Proposals.....	36
Publications:	39
Bibliography	40
Annexes	49
Annex 1	50
Annex 2	51
Annex 3.....	52
Annex 4.....	54

Abbreviations used in the Thesis

EHIS	European Health Interview Survey
GBD	global burden of disease
CMP	chronic musculoskeletal pain
CIT	critical incident technique
WHO	World Health Organization

Introduction

Musculoskeletal pain is one of the most common health disorders, significantly affecting the quality of life of approximately 1.71 billion people worldwide (WHO, 2023). It affects 13–47 % of the global population, with approximately 39 to 45 % suffering from chronic pain (El-Tallawy et al., 2021). In Latvia, 46.9 % of residents aged 15 and older experience physical pain daily (Official Statistics Portal, 2021). Among them, 60.3 % face lower back problems, which is the most common type of musculoskeletal pain.

Due to the demands of continuous pain management, chronic pain has been associated with a variety of negative outcomes, including psychological distress (McBeth et al., 2002; Yang et al., 2021), depression (Orhurhu, 2019; Tenti et al., 2022), social isolation (Bannon et al., 2021; Karayannis et al., 2019), and a lower quality of life (Fernandez-Feijoo et al., 2022; Hadi et al., 2019). Sometimes, a person who could still integrate into the labour market or a social community isolates themselves from society and refuses to use the available resources. This causes suffering not only for the individual but also for their loved ones, who do not know how to help them.

Considering the extent to which chronic pain can affect overall quality of life, it is essential to do everything possible to help people with chronic musculoskeletal pain (CMP) adapt positively to their situation. The most effective way to achieve this is through a holistic approach, which focusses not only on biological, but also on social and psychological factors (Martinez-Calderon et al., 2020; Steinmetz, 2022).

In the context of health psychology, resilience can be defined as the ability to adapt positively following the experience of significant health challenges (Lyng et al., 2021). In this work, the understanding of resilience is based on the socio-ecological model developed by Professor Michael Ungar of Dalhousie University in Canada and Director of the Resilience Research Centre. According

to this model, resilience is described as a multifactorial and multisystemic phenomenon, or adaptive capacity, that emerges from the interaction between an individual's characteristics, skills, and external environmental factors (Ungar et al., 2013; Kuldās & Foody, 2022).

The authors who have studied the resilience of chronic patients acknowledge that it can be cultivated at any stage of life, at any age, and throughout any disease progression. Furthermore, resilience is associated with higher well-being indicators and greater adherence (Cal et al., 2015; Gheshlagh et al., 2016). Resilience is positively correlated with overall quality of life and better disease management in patients with CMP (Chng et al., 2023; Priori et al., 2021).

Although the proportion of qualitative research to explore protective factors of resilience has grown in recent years and numerous qualitative studies (Daffin et al., 2021; Rolbiecki et al., 2017; Shaw et al., 2020) have been conducted in this field, there is still a knowledge gap regarding the maintenance of resilience in the long term, as only a few studies have focused on the dynamics of resilience over time (De Santis et al., 2013; Geard et al., 2018).

In Latvia, resilience in people with chronic diseases has been studied only quantitatively. To date, no qualitative studies have been conducted in Latvia that would allow an in-depth examination of the factors that influence resilience in these people with CMP.

Aim of the Thesis

To describe lived experiences of resilience among people with chronic musculoskeletal pain.

Tasks of the Thesis

To achieve the aim of this Thesis, the following tasks have been formulated:

- 1 Conduct a literature review on the research topic to clarify the usage of the concept and identify knowledge gaps.
- 2 Develop the research methodology.
- 3 Establish criteria for participant selection, identify suitable people for interviews, and conduct interviews.
- 4 Develop an interview protocol and conduct individual interviews.
- 5 Summarise the experiences of each interviewee and highlight key turning points in promoting and maintaining resilience.
- 6 Through the integration of various qualitative data analysis methods, explore strategies for promoting and maintaining resilience specific to this group of people and identify critical incidents that influence changes in resilience.
- 7 Organise focus groups to discuss research findings with participants and collect additional data not obtained in individual interviews.
- 8 Conduct an integrative analysis of the research results.
- 9 Evaluate the findings, compare them with previous studies, and draw conclusions.
- 10 Develop recommendations for individuals with CMP, their families, as well as healthcare professionals, psychologists, and other specialists who work with this group of people in Latvia.

Research Question

What is the experience of developing and maintaining resilience in patients with HMS?

Subquestions

RQ1: How do people with CMP describe the development of resilience?

RQ2: How do people with CMP describe factors that have contributed or hindered resilience at the beginning of their illness?

RQ3: How does resilience change over time?

RQ4: How do people with CMP describe the manifestation of resilience in the long term?

RQ5: How do people with CMP describe factors that have contributed to or hindered resilience in the long term?

RQ6: What characterises the experience of developing and maintaining resilience in people with CMP who use wheelchairs compared to those with CMP without mobility restrictions?

Novelty of the Thesis

The novelty of this Thesis lies in the chosen topic. This research not only describes strategies to promote and maintain resilience, but also examines how individuals with CMP adjust to their illness and how resilience develops over time. Long-term resilience is under-researched globally, and such studies have not been conducted in Latvia. This research also reveals the factors that hinder positive adaptation after experiencing difficulties.

So far, PhD theses defended in the field of psychology in Latvia have applied a quantitative or mixed research strategy. This is the first PhD thesis to use only a qualitative research strategy. Considering that this research can become an example for other researchers, the procedure and methodology of the study were described in detail. The scientific novelty of the Thesis also lies in the methodological approach chosen, integrating multiple data analysis methods, including the critical incident technique (CIT), which has not been previously applied in studies conducted in Latvia. This integrative approach, which combines thematic analysis, narrative analysis, and the CIT, allows the analysis of resilience from various perspectives. It examines the content of resilience, describes changes in resilience over time, and analyses the causes of these changes.

Practically, this study can provide valuable information and serve as a basis for developing recommendations for both individuals with CMP and healthcare professionals, psychologists, and other specialists working with this patient group in Latvia. By helping CMP patients manage pain more effectively, it could potentially reduce the burden on the healthcare system and promote social activity among these individuals, including prolonged participation in the labour market. Research indicates that staying in the labour market is positively associated with the physical and mental health of CMP patients (Blake et al., 2021), while lack of social interaction is associated with higher intensity of pain and anxiety (Baumgartner et al., 2023).

To develop targeted recommendations specifically for patients with CMP living in Latvia, it is crucial to base them on research results conducted within the cultural context of Latvia. Values and norms can vary between cultures, influencing how individuals cope with difficulties. As resilience among CMP patients in the Latvian cultural context has not been studied to date, this research will make a significant contribution to improving the quality of life of CMP patients.

1 Literature review

1.1 Theoretical overview of the concept of “resilience”

In the scientific literature in the field of psychology, various definitions of resilience can be found. Resilience is defined as a personality trait that facilitates positive adaptation (Block & Kremen, 1996; Wagnild & Young, 1993), as a dynamic interaction process between risk and protective factors (Davydov et al., 2010; Luthar et al., 2000), and as the outcome of positive adaptation or the ability to maintain adequate functioning (Gartland et al., 2019; Simmons & Yoder, 2013). An integrated explanation of resilience is also present, defining resilience as both a trait, a process, and an outcome (Lepor & Revenson, 2006) describing it as a multifactorial construct that is influenced by biological, psychological, social, and ecological factors (Masten et al., 2021; Ungar, 2021). In this study, Michel Ungar’s social-ecological model (Ungar, 2021) was chosen as the most appropriate theoretical framework to define resilience, where resilience is viewed as a multifactorial, multidimensional, and context-dependent construct that can change over time.

To develop resilience, two prerequisites are necessary: some kind of adversity and positive adaptation. Resilience can manifest in various forms such as resistance or immunity to stressors, recovery or bouncing back after encountering stressors, and growth or bouncing beyond (Hiebel et al., 2021; Lepor & Revenson, 2006).

When describing resilience, it is important to differentiate between short-term resilience, experienced after acute crises, and long-term resilience, which manifests when facing ongoing life challenges, such as living with chronic health conditions (Bonanno & Diminich, 2013; Geard et al., 2018). In chronically adverse circumstances, a positive outcome is not achieving well-being but rather the ability to function better than expected under those specific conditions (Mapendere et al., 2019). This can be achieved not only by

changing external circumstances but also by changing oneself, reorganising life, and formulating new goals (Bonanno & Diminich, 2013; De Santis et al., 2013).

In the context of health psychology, over the last few years there has been a shift away from disease-focused to health-focused research (Denckla et al., 2020). This shift emphasises studying how to improve people's health and overall quality of life despite the presence of various risk factors, rather than focussing only on reducing symptoms and risk factors.

Alongside the positivist/postpositivist paradigms, researchers increasingly base their understanding of resilience on one of the nonpositivist paradigms, such as constructivism or critical theory, to emphasise the subjective nature of knowledge and contextual nature of resilience (Gentili et al., 2019; Hayman et al., 2017; Ungar, 2018). These paradigm shifts are driving an increase in qualitative research, which allows one to study resilience in its unique context and examine how it changes over time. Since a primary goal of health psychology is to understand the factors that influence human behaviour, qualitative research can provide valuable information on people's motivations and the meaning they attribute to their decisions (Renjith et al., 2021).

1.2 Characteristics of musculoskeletal pain and its impact on patients' quality of life

Musculoskeletal pain is defined as acute or chronic pain that affects bones, muscles, ligaments, tendons, and even nerves (El-Tallaway et al., 2021). The most common musculoskeletal disorders worldwide are lower back pain (36.8 %), other types of musculoskeletal disorders (21.5 %), osteoarthritis (19.3 %), neck pain (18.4 %), gout (2.6 %), and rheumatoid arthritis (1.3 %) (Safiri et al., 2021).

From 2020 to 2050, it is projected that the prevalence of musculoskeletal pain worldwide will increase by 115 %, posing significant challenges and financial burdens on both patients and healthcare systems. Currently,

musculoskeletal disorders are already the second leading cause of work disability (GBD, 2021) and one of the most common reasons for early retirement (WHO, 2023).

CMP affects nearly all aspects of human life, negatively impacting overall quality of life (Fernandez-Feijoo et al., 2022), contributing to the development of depression (Tenti et al., 2022), increasing fear of movement (Agnus-Tom et al., 2022), and increasing the risk of loneliness (Emerson et al., 2018).

Researchers acknowledge that treating CMP requires a holistic approach, considering pain within the context of overall life and focussing on patient lifestyle, mental health, social environment, and treatment of comorbidities that may affect the course of CMP (El-Tallway, 2021). Investing in education for patients and healthcare providers could improve CMP management and improve understanding of various pain relief methods, encouraging patients to use both pharmacological and non-pharmacological approaches (Mohapatra et al., 2024).

1.3 The importance of resilience in people with CMP

Although people with chronic diseases often face various challenges and emotional difficulties, resilience can become a resource that helps not only to cope with difficulties and reduce disease-related stress, but also to increase happiness, quality of life, and satisfaction of life (Tecson et al., 2019).

Previous studies (Brittain et al., 2022; Chavare & Natu, 2020; Chng et al., 2022; Gentili et al., 2019; Ramírez-Maestre et al., 2019; Sturgeon et al., 2016) indicate that resilience plays a key role in adaptation to chronic pain. In the context of chronic pain, the effect of resilience can manifest itself in faster recovery from the negative impact of pain, through effective preservation of positive functioning despite the presence of pain (Sturgeon & Zautra, 2010) or even experiencing personal growth (Ungar, 2021). Resilience is positively associated with self-efficacy in pain and negatively associated with pain catastrophisation (Chen & Jackson, 2018; Newton-John & Hunter, 2014).

Several qualitative studies have also been conducted in the population of people with CMP. The most frequently cited resilience-promoting factors in these studies include social support and strengthening of social interactions (Daffin et al., 2021; Hassani et al., 2017; Rolbiecki et al., 2017; West et al., 2012), access to information and ability to control treatment decisions (Nafradi et al., 2018; Rolbiecki et al., 2017), acceptance of illness and associated limitations (Daffin et al., 2021; Hassani et al., 2017; Rolbiecki et al., 2017; West et al., 2012), and maintaining positive perspective (Hassani et al., 2017; West et al., 2012).

Although the proportion of qualitative research to explore protective factors or resilience has grown in recent years and numerous qualitative studies (Daffin et al., 2021; Rolbiecki et al., 2017; Shaw et al., 2020) have been conducted in this field, there is still a knowledge gap on the maintenance of resilience in the long term (De Santis et al., 2013; Geard et al., 2018). It is important to understand how resilience changes throughout the illness, as some strategies may be more effective in the early stages of the illness, while others may be more effective in maintaining resilience over the long term.

This Thesis aims to describe not only the factors influencing the development of resilience in individuals with CMP, but also long-term strategies that enable them to “bounce back in the face of adversity” and live the best version of life despite pain.

2 Methods

2.1 Researcher's position and reflexivity

My motivation to study the formation and maintenance of resilience among individuals with CMP was driven by my own experience with CMP. Being an insider to this group helped me better understand the study participants and possibly nurtured their openness during the study. On the other hand, it posed the risk of interpreting participants' responses through my perspective. Being aware of the subjectivity of the research and the potential role conflict in the given research, it was decided to keep the reflective journal throughout the study.

The reflective journal can serve to record everything that triggers the researcher's inner dialogue during the research process, such as doubts, questions, attitudes towards research participants (Ortlipp, 2008). In this study, the reflective journal was used both to capture immediate reflections after interviews and to reflect on my role as a researcher, as well as for practical purposes: to write down ideas that would be useful in the ongoing research process. In the reflective journal, I also documented changes observed in the body language of research participants during interviews.

2.2 Research strategy and design

The present study is grounded in the constructivism and social constructionism paradigms. The common ontological position of both paradigms is the belief in the existence of multiple realities, while the shared epistemological position is the belief that objective knowledge is not possible, as it is always mediated by the interpretation of an individual or group. Researchers working from a constructivist stance believe that each individual constructs its own meanings (Hiller, 2016) but representatives of social constructionism emphasise intersubjectivity and believe that knowledge about reality is

co-constructed among persons who share a particular socio-historical context (Crotty, 1998).

In this research, the constructivist paradigm primarily served as the foundation for conducting narrative analysis and describing how individuals with CMP perceive their illness and how their attitudes toward pain and experienced difficulties change as their perspectives of life evolve. Meanwhile, the perspective of social constructionism was used to analyse the influence of the social environment on the beliefs, values and behaviour patterns of the patients.

To achieve the objective of this investigation, a qualitative research strategy was chosen because the quantitative methods could not address the questions posed. In health psychology, understanding the motivation and causes of human behaviour is crucial, and qualitative strategy can provide a deeper understanding of patients' perspectives and experiences (Biggerstaff, 2012).

In our study, the multiple case study approach by Robert Stake (1995, 2006) was chosen, considering that Stake represents constructivism. This design allows for a deep analysis of each case, examining it from various perspectives over different time periods, including consideration of the unique context of each case. Multiple case studies are often used in health psychology (Breet & Bantjes, 2017; Boblin et al., 2013; Fearon et al., 2021), because these studies allow a researcher to analyse within each setting and between settings.

2.3 Participants and procedure

Seventeen people with CMP (7 men, 10 women, aged 29 to 64) volunteered to participate in this study. Considering that chronic pain is one of the most common causes of disability and social isolation at work, it was decided to include only people of working age (18 to 65 years). The motivation of the author of the Thesis was driven by a desire to understand what helps maintain

resilience in the long term and remain socially active despite pain. Detailed inclusion and exclusion criteria can be viewed in Table 2.1.

Table 2.1

Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
People of working age from 18 to 65 years old	Younger than 18 years old or older than 65 years old
CMP developed during lifetime	CMP since birth or terminal illness
CMP lasts at least 5 years and manifests at least half of this time	CMP lasts less than 5 years
Average pain intensity on self-assessment scale from 0–10 is 3 or higher	Average pain intensity on self-assessment scale from 0–10 is less than 3
Proficient in Latvian	Not proficient in the Latvian

The authors purposely sought participants with different types and intensities of CMP, including individuals with back pain, joint pain, as well as pain in various locations following trauma. The sample included both HMS patients whose pain significantly does not hinder movement, and those who use wheelchairs. Potential participants were approached through patient associations, social network groups, and personal contacts. A detailed summary of participants’ gender, age, diagnoses, and employment can be found in Annex No. 2.

2.4 Data collection methods

Since the multiple case study design used in this study involves in-depth exploration of cases using various data collection methods (Crowe, 2011; Sibbald et al., 2021; Zahle, 2019), it was decided to employ a multimethod approach during the data collection phase and combine individual semi-structured interviews with focus groups conducted with interviewed participants.

For some participants, it could be easier to disclose personal and sensitive information through individual interviews (Kaplowitz, 2000; Kruger et al., 2019), but for others, the focus group format could be more appropriate. Listening to other participants' experience stories can encourage self-disclosure and stimulate memory (Guest et al., 2017; Kitzinger, 1994).

The data was collected personally by the author between April 2022 and March 2023. Taking into account the restrictions imposed by the COVID-19 pandemic and the fact that the study participants lived in various regions of Latvia, interviews and focus groups were conducted both in person and remotely using the Zoom platform. The interviews lasted between 57 and 110 minutes, while the average duration of the focus groups was 120 minutes.

To prepare for the major study, a protocol was developed for the semi-structured interview and three pilot interviews were conducted. Participants were asked to provide feedback on the clarity of the questions. Initially, we intended to explore only the factors that influence resilience, but after the analysis of the pilot interviews, it was noticed that people often mentioned circumstances in which resilience had decreased or increased significantly and described their experience in depth. It was decided to revise the interview questions and supplement the selected data analysis method (thematic analysis) with two additional methods: narrative analysis and the critical incident technique. In qualitative research, this practice of evolving research questions during the study is common, as researchers, exploring the research problem more deeply, may uncover new aspects they wish to explore (Agee, 2009; Creswell, 2007; Flick, 2006). The interview questions aligned with the research questions can be found in Annex 3.

Data collection was stopped after 17 interviews due to reaching code and meaning saturation and obtaining sufficient information to answer the research questions.

Based on the analysis and interpretation of data from individual interviews, 20 questions were formulated for the focus groups (see Annex 4). The aim of these questions was to verify whether participant recognised the resilience-enhancing and hindering factors identified in the interviews, explore ambiguously assessed factors in depth, and gather new information not obtained in individual interviews. Two focus groups were conducted, one with six participants in person and the other with five participants in a video conference format.

2.5 Data analysis methods

In this study, the pluralistic data analysis approach was chosen. Pluralism in qualitative research reflects an approach where multiple qualitative analysis methods are used to analyse specific data sets (Clarke et al., 2014). This approach aims to provide a rich, multilayered examination of data from various perspectives, thereby offering a holistic understanding of the research questions (Dewe & Coyle, 2014). We combined reflexive thematic analysis (Braun & Clarke, 2006), narrative analysis (Crossley, 2000), and the enhanced critical incident technique (ECIT) (Butterfield et al., 2009). By combining these three methods lived experiences can be seen from different analytical lenses, allowing one to analyse both the content and dynamics of such experiences.

Thematic analysis allowed us to answer the ‘what’ questions about resilience formation and maintenance. Narrative analysis allowed us to obtain answers to ‘how’ questions about resilience dynamics and changes in the habits and attitudes of research participants toward themselves and others while living with CMP. The critical incident technique allowed us to answer the ‘why’ questions and describe the ups and downs that significantly changed people’s lives.

2.6 Trustworthiness

In qualitative research, the rigour of the study is determined by its trustworthiness, which according to Lincoln and Guba (Lincoln & Guba, 1985) includes credibility, transferability, dependability, and confirmability.

In the current study, credibility was ensured by triangulating data collection methods, researcher triangulation and member verification. Transferability was ensured by providing a comprehensive description of participants' experiences (including information on differences between research participants with different severities of health disorders) and describing the potential influence of context on the research results. Dependability was achieved through a rich description of the study methods and the justification of each step in the research process. Confirmability was achieved through regular discussions between both researchers to ensure that interpretations and findings were clearly derived from the data.

2.7 Description of integrated data analysis procedure

To analyse the results of individual interviews obtained through three data analysis methods, we applied both within-case and across-case analysis (Ayres et al., 2003). The across-case analysis allowed us to find common themes in all accounts, within-case analysis enabled in-depth exploration of single accounts, and provided contextual richness.

Meanwhile, to conduct integrated analysis and comprehensively analyse data from both datasets (individual interviews and focus groups), the analytical integration approach described by Lancaster University Professor Ann Cronin and colleagues (Cronin et al., 2008) was implemented. According to Cronin, the first step involves a separate analysis of each data set using the most appropriate data analysis method. The second step is focused on identifying a 'promising' finding within a data set that could be picked up as a thread to follow in the other data sets. The third step involves connecting these identified

threads with the research question. The fourth step entails integrating all the threads and exploring the research phenomenon from various dimensions. The research framework, which includes integrated data analysis, can be seen in Figure 2.1.

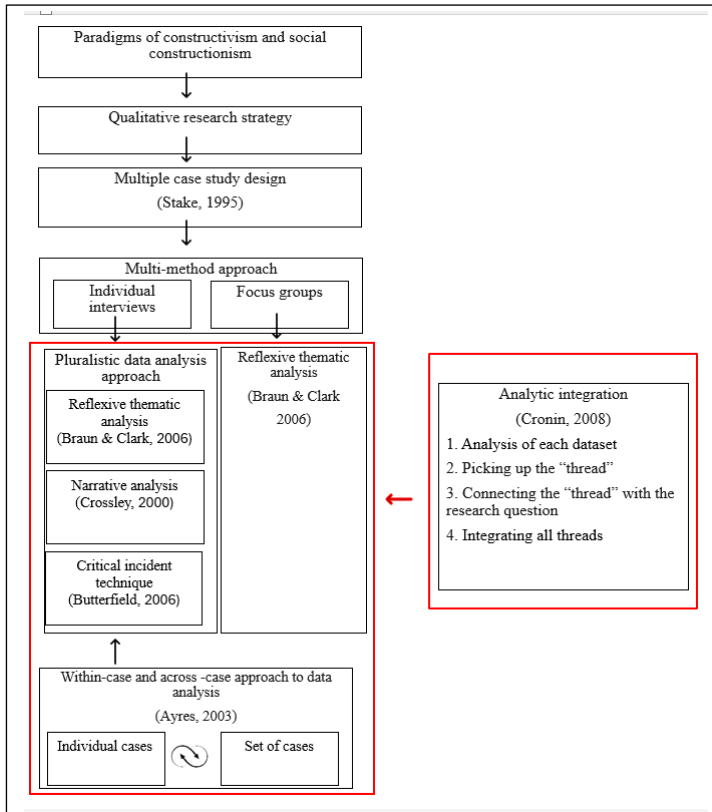


Figure 2.1 Research framework

2.8 Ethical considerations

Before starting the study, risks related to research ethics were evaluated and appropriate measures were implemented to mitigate these concerns. This was followed by the preparation of a submission for approval from the RSU Research Ethics Committee (see Annex 1). Informed consent forms were developed for both individual interviews and focus groups. These forms described the study's objectives, procedures, benefits, data processing and storage, as well as participants' rights. All participants were informed verbally and in writing about the purpose of the study, their rights, and signed a written informed consent.

3 Results

3.1 RQ1: The development of resilience

In addressing the research question, “How do people with CMP describe the development of resilience?”, the study revealed that resilience begins to develop only when people reach a threshold of physical or emotional suffering that is significant enough to acknowledge a problem and take responsibility for the future. As long as the pain is tolerable, many interviewees do not pay enough attention to their health. The narrative tone of the study participants when discussing this period was rather pessimistic, expressing regret that health issues were not prioritised. Resilience developed more rapidly in interviewees with sudden or severe health problems, although it declined again in cases of very intense pain. Reasons why some people bounce back more quickly than others are influenced by the intensity of pain, individual level of endurance, and the support available. In the early stages of the disease, many patients with CMP found it difficult to accept the limitations imposed by pain and to let go of their imagined future. Accepting the disease was more difficult for patients who experienced pain during adolescence.

3.2 RQ2: Factors influencing the development of resilience

Addressing the research question, “How do people with CMP describe factors that have contributed or hindered resilience at the beginning of their illness?”, the study revealed that the development of resilience was hindered by a lack of information on the causes of pain/illness, insufficient concern for health, prioritising others’ needs above their own, difficulties in seeking or receiving social support, the impact of emotional state on pain, and inappropriate physical exercise.

The interviews revealed that the same factors can manifest differently depending on the intensity of the pain. In cases of intense pain, lack of

information about the disease, poor communication with treating physicians, or lack of hope from medical professionals prompted patients to seek various solutions and be more open to various methods. On the other hand, under the condition of moderate pain, these same factors promoted resignation towards pain and neglect of addressing health issues.

Factors that contributed to resilience included support and inspiration from others; taking responsibility for improving health and not giving up in the face of pain; using various pain management techniques; changing internal perspectives; participating in enjoyable activities to distract from pain; listening to oneself and recognising personal abilities.

The role of social support, indirectly connected to several other contributing factors, is of particular significance. External support, including professional psychological support and support from other CMP patients, helped people feel less isolated in dealing with their illness, making it easier to accept the diagnosis, gather information on various strategies for coping with the illness, and change their internal perspective.

Factors such as past hardship experiences, messages received from parents, the level of support received, questioning the treatments prescribed by specialists, listening to advice from others and self-education about the illness were both helpful and hindering, depending on their ability to critically assess the potential risks and benefits of their actions or decisions.

3.3 RQ3: Changes in resilience

Addressing the research question, “How does resilience change over time?”, it was found that changes in resilience occur when individuals accept aspects of life related to pain that cannot be changed, adjust their lifestyle and internal perspective, gain or lose hope for health improvement, or experience adversities unrelated to the illness, such as losing close relationships.

If individuals do not experience significant upheavals, acceptance of the disease, the formation of new habits, and the development of resilience occur gradually. If changes in health or emotional state are rapid, they are followed by more pronounced ups and downs in resilience.

Pain itself plays the most important role in the development of resilience. Pain combined with hope enhances resilience, while pain combined with hopelessness decreases it. Since resilience development is closely related to the progression of pain and illness, by gaining a better understanding of their pain, people with CMP could identify existing and necessary resources to help themselves and thus promote resilience.

3.4 RQ4: Manifestation of resilience in long-term

Addressing the research question, “How do people with CMP describe the manifestation of resilience in the long term?”, the study revealed that living with CMP for a long time, the narrative tone of the interviewees becomes more positive. Contrary to the early stages of the disease, pain is no longer all-encompassing, but rather a facet among many experiences. Patients integrate pain into their daily lives by letting go of unrealistic expectations for themselves, striving to maintain their social roles, and living as fully as possible despite pain.

In contrast to the initial stages of the disease, for interviewees who often moved from one method to another in search of the best solution to overcome pain, their long-term pain management relied on methods that have already been proven to be effective. Participants admitted that they no longer try to fight the disease, but are learning to live with the disease. If people with CMP, despite illness and pain, manage to find meaning in their lives and discover things to be thankful for and satisfied, pain becomes more manageable.

Several interviewees stressed the importance of balance. It is important to avoid becoming obsessed with maintaining a healthy lifestyle, overdoing

physical activities, or perfectionism at work. It is important to live with joy, otherwise dissatisfaction and stress increase, which negatively affects health.

3.5 RQ5: Factors influencing resilience in the long term

Addressing the research question, “How do people with CMP describe factors that have contributed to or hindered resilience in the long term?”, it was found that maintaining resilience in the long-term is supported by adopting regular and moderate physical activities, seeking meaningful and joyful activities, developing emotional regulation skills, especially stress management, and establishing healthy boundaries in relationships. The main factors that hinder long-term resilience include a lack of intrinsic motivation and insufficient self-discipline. Motivation for self-care is fostered by an increase in pain, the desire to contribute meaningfully and positive self-esteem, while very intense pain, loss of hope, too much care from loved ones, and workaholism diminish motivation.

Unlike at the onset of illness, when resilience development was largely influenced by external factors, long-term resilience maintenance is more tied to internal factors, particularly the ability not to centre life around pain.

Factors influencing resilience, like concern for others, participation in physical activities, or allowing oneself to be vulnerable, cannot be definitively categorised as solely helping or hindering. Each factor's impact depends on its interaction with others. For example, acknowledging one's vulnerabilities alongside awareness of personal resources helps establish healthy boundaries. In contrast, when vulnerability combines with too much care from family and low motivation, it can reinforce powerlessness and contribute to victimisation.

3.6 RQ6: Resilience in people with CMP who use wheelchairs

Addressing the research question, “What characterises the experience of developing and maintaining resilience in people with CMP who use wheelchairs compared to those with CMP without mobility restrictions?”, the study revealed that the most significant differences are evident in the initial stages of the illness. However, in the long term, the strategies for maintaining resilience among people with CMP who use wheelchairs do not substantially differ from the overall group.

In the early stages of the disease, people with CMP who use wheelchairs experience more rapid and intense fluctuations in resilience. The primary factor that affects the development of resilience in this group of people is spiritual and psychological support, which helps shift the focus of the participants from “Why did this happen to me?” to “How do I move forward?” When people in wheelchairs manage to find meaning in their lives despite the losses caused by the illness, they experience a significant increase in resilience.

In the long term, living with pain, these individuals socialise more actively, especially connecting with people who have similar health problems. Their primary challenge is the difficulty of finding a balance between being physically and socially active and independent, but at the same time acknowledging one’s limits and the need for support. One of their main needs is the desire to contribute to their family or society and find meaningful activities despite the limitations imposed by their illness.

Discussion

This Thesis aimed to explore how people with CMP describe their experience with the formation and maintenance of resilience in the long term. Through the appropriately chosen methodological strategy, the aim of the Thesis was achieved and a rigorous study was conducted, providing answers to all research questions.

By summarising the experiences of the study participants and based on the dissertation author's interpretation of how resilience is expressed in these accounts, it was revealed that resilience begins to develop only when individuals reach a threshold of physical or emotional suffering significant enough to assume responsibility for the future. It aligns with the presumption that resilience cannot be developed without exposure to risk or adversity (Ungar, 2018; Vella & Pai, 2019).

Previous studies (Brittain et al., 2022; Ramirez-Maestre et al., 2019; Sturgeon et al., 2016) have confirmed that resilience helps to adapt to chronic pain and endure pain more easily, but this study demonstrated that influence can also work in both directions, suggesting that pain can become a promoter of resilience. When discussing and interpreting factors that have helped promote resilience in the early stages of the disease, several interviewees of this study emphasised the role of social support from other people with similar problems. The importance of support groups where people with similar issues come together has also been emphasised by other researchers (Kim et al., 2019, Rolbiecki et al., 2017).

Another factor that emerged in this study concerning the development of resilience in the early stages of the disease was the role of the relationship between the healthcare providers and the patient. The findings of this investigation are consistent with some previous studies (Luo et al., 2018; Nafradi et al., 2018; Rolbiecki et al., 2017) that indicate that the resilience of people with chronic diseases is greatly influenced by the success of their contact with

healthcare providers. The attending physician has a great influence on whether a person can maintain hope (Cuomo et al., 2023; Nafradi et al., 2018).

In a qualitative study conducted in England that analysed the main barriers to effective chronic pain management, the authors (Hadi et al., 2017) identified six disruptive factors, five of which were also mentioned in this study: lack of interest and empathy from healthcare providers, insufficient knowledge of pain management among general practitioners, communication gaps between healthcare professionals and patients, long waiting times for appointments, and short consultation times. The only disruptive factor not directly reflected in the responses of the CMP patients interviewed was the lack of an integrative and multidisciplinary approach. However, two participants recognised the need for a comprehensive approach to pain management, which is to some extent in agreement with this factor.

According to the constructivist paradigm, the extent of suffering caused by pain in a person's life depends not only on the physical symptoms of pain but also on the individual's subjective experiences and perceptions (Nakamura & Chapman, 2002). In this study, the constructivist paradigm helped explain how changing cognitive models and attitudes toward pain helped reduce the impact of pain. Two other studies (Damsgard et al., 2010; Gong et al., 2023) also revealed that catastrophising, fear of movement, and low self-efficacy can increase pain intensity by influencing perception of physical pain.

An interesting observation occurred during the narrative analysis of the interviews. While describing the onset of their illness, the narratives of the participants were initially quite pessimistic. However, when discussing coping strategies, their narrative tone became more positive. This suggests that the attitude toward pain, and consequently the resilience, is greatly influenced by what individuals choose to focus on. Bodil Tveit, who analysed how resilience is expressed in stories of recovering from hip fractures in the oldest age, acknowledges that telling stories could be resources for resilience, since stories

not only represent an existing capacity, but also shape, strengthen, and nurture the ability of storytellers to cope with their conditions (Tveit, 2023). Therefore, it is important for psychologists, medical personnel and other specialists involved in the care of patients with CMP to help these individuals become aware of their current resources and remember the positive experiences of overcoming difficulties, thus promoting self-efficacy.

In systematic reviews summarising factors that affect resilience in people with chronic diseases, the most frequently cited contributing factors include social and psychological support and change of internal perspective, but as hindering factors, researchers have found social isolation, pessimism and stress (Cal, 2015; Gheshlagh, 2016; Stewart & Yuen, 2011). These factors coincide with the results of our study.

When examining how resilience changes at different stages of illness, this study revealed that people living with CMP no longer strive to fight the disease, but rather learn to co-exist with it and find joy despite the losses caused by pain. Similar findings were also reported in a qualitative study conducted in the UK (Scott et al., 2020), which found that people with CMP in the long term tend to broaden their focus beyond pain, participating in activities that bring them happiness. This research unveiled several challenges that people with CMP face in their daily lives and that can influence resilience. Many of these challenges have been previously observed in other studies as well. For example, the challenge of maintaining a daily routine and social roles despite the fact that the body is often an obstacle that creates a series of limitations.

Another challenge is the difficulty of accepting the limitations imposed by pain, which can manifest as visible impairments and lead to a distorted sense of self. Some of the participants in this study acknowledged that since pain is not visible, others may not notice that one is feeling unwell; therefore, a person himself must be ready to ask for support when necessary. These results align with a qualitative meta-synthesis “The experience of chronic pain across conditions”,

in which 41 studies were included (Crowe et al., 2017). Five meta-themes were identified in these studies: 1) the body as an obstacle; 2) invisible but real; 3) disrupted sense of self; 4) unpredictability; and 5) keeping going (Crowe et al., 2017).

One of the paradigms on which this research is based is the paradigm of social constructionism. Authors who look at reality from the point of view of this paradigm recognise that the dominant narratives in the social environment permeate all people's everyday life, including how people relate to their bodies when they encounter an illness, especially when the illness is physically visible (Conrad & Barker, 2010). The findings of this study clearly illustrated how inherited thinking patterns from family and close community influence the formation of identities, attitudes toward emotions, and relationship building among people with CMP.

Looking separately at the development and maintenance of resilience in people with CMP, who use wheelchairs, it was found that one of the main challenges that emerged in the interviews was the difficulty of finding a balance between being physically and socially active and independent, but at the same time acknowledging one's limits and the need for support. The results of this study align with other studies (Geard et al., 2018; Machida et al., 2013) that analysed resilience in people with spinal cord injuries and revealed that balancing dependence and autonomy to remain part of ordinary life was essential to stay emotionally stable. Another characteristic specific to this subgroup was a pronounced desire to be helpful and contribute to the family or society. The importance of social participation for this subgroup is also affirmed by a study conducted among patients with rheumatoid arthritis in Norway (Herrera-Saray, 2013).

Although the results of this study align largely with findings from other studies conducted among people with CMP, this study revealed a unique characteristic that has not been found in other similar studies to date. This was

a tendency to replace self-care with concern for others or various responsibilities. This tendency may be unique to the Latvian context because Latvian mentality has evolved in an environment where submission to foreign powers and the struggle for survival were prevalent, highlighting values such as hard work, responsibility towards others, and the drive to demonstrate one's worth.

Strengths and limitations

This study has several limitations: a small number of participants who voluntarily enrolled, potentially excluding individuals with low levels of resilience. Participants were asked to reconstruct memories of past events that could have affected the precision of these memories. Part of the data was collected remotely, making it impossible to fully observe participants' body language, therefore, this could be considered a limitation. On the other hand, the strength of the study lies in its scientific rigour, novelty in research methods, and integrative approach to data analysis, which might serve as one of the examples for other researchers in Latvia.

The practical implications of a study

The findings of this study can provide practical advice to people with CMP on promoting resilience and identifying factors that hinder resilience. The proposals developed from the study can be implemented by healthcare professionals, psychologists, and other specialists working in Latvia who encounter CMP patients daily. The study can also benefit the families of people with CMP by providing valuable information about the main needs and challenges of this group of people.

Future research

In future qualitative studies, it would be valuable to investigate how individuals with other chronic diseases, including those with multiple comorbidities, develop and maintain resilience. Another important research

direction could focus on creating intervention programmes designed to promote resilience among people with CMP and to evaluate the long-term impact of these programmes.

Conclusions

This Thesis aimed to explore how people with CMP describe their experience with the formation and maintenance of resilience in the long term. The goal was achieved. 17 CMP patients were interviewed, and their experiences of adapting to life with chronic pain were described. Conclusions were drawn from the dissertation author's interpretation of how resilience is reflected in these accounts. Answers to all research questions were obtained:

RQ1: How do people with CMP describe the development of resilience?

After analysing the accounts of experiences, the dissertation author concluded that the development of resilience is closely related to the intensity of pain and the overall context of life. Until difficulties reach each individual's threshold of endurance, resilience either does not develop or develops very slowly. Resilience increases with increasing intensity of pain, but only up to a point where pain becomes too intense. If the pain is unmanageable or if the patient loses hope, resilience declines.

RQ2: How do people with CMP describe the factors that have contributed or hindered resilience at the beginning of their illness?

The hindering factors of resilience are a lack of information about the causes of pain/illness, insufficient concern for health, prioritising others' needs above their own, difficulties in seeking or receiving social support, the impact of emotional state on pain, and inappropriate physical exercise. The promoting factors of resilience are support and inspiration from others; taking responsibility for improving health and not giving up in the face of pain; using various pain management techniques; changing internal perspectives; engaging in enjoyable activities to distract from pain; listening to oneself and recognising personal abilities.

RQ3: How does resilience change over time?

Interviewed people with CMP, attempting to recall their past experiences with the illness, acknowledged that changes in their attitudes towards pain, pain management, and overall quality of life – interpreted as changes in the development of resilience – transformed when they accepted aspects of life related to pain that cannot be changed, adjusted their lifestyle and internal perspective, gained or lost hope for health improvement, or experienced adversities unrelated to the illness, such as losing close relationships.

RQ4: How do people with CMP describe the manifestation of resilience in the long term?

Living with pain for the long term, interviewed people with CMP learn to integrate pain into their daily lives by letting go of unrealistic expectations for themselves, striving to maintain their social roles, and living as fully as possible despite pain. Their narrative tone becomes more positive; they are shifting their focus away from pain as the central aspect of their existence.

RQ5: How do people with CMP describe factors that have contributed to or hindered resilience in the long term?

To adapt to life with chronic pain in the long term and live as fully as possible, the interviewed CMP patients benefit from engaging in regular and moderate physical activities, seeking meaningful and joyful activities consciously, developing emotional regulation skills, especially prioritising stress management, and establishing healthy boundaries in relationships. However, the lack of internal motivation and sporadic attention to health hinder this process. The factors mentioned above may be considered as factors that influence long-term resilience.

RQ6: What characterises the experience of developing and maintaining resilience in people with CMP who use wheelchairs compared to those with CMP without mobility restrictions?

The interviewed people with CMP who use wheelchairs reported that during the initial phase of their illness, they experienced both significant determination and feelings of helplessness. Furthermore, the changes in their behaviour and attitudes were notably more pronounced than those observed in other participants, suggesting that this subgroup experiences more rapid and intense fluctuations in resilience. The primary factor that affects the development of resilience in this group of people is spiritual and psychological support. In the long term, living with pain, these individuals socialise more actively, especially connecting with people who have similar health problems. Their primary challenge is finding a balance between autonomy and reliance on others.

Proposals

Based on the findings of the study, several recommendations were proposed.

For healthcare professionals (doctors, nurses, and mental health specialists)

- 1 Financial support of patient associations with the aim of organising face-to-face support groups, informative seminars, sports classes, or creative workshops for people with CMP, thus promoting the socialisation of these individuals, reducing stigma and the feeling that they are alone in their suffering.
- 2 Address the problem of reducing queues at specialists and providing greater state support for rehabilitation services, allowing working individuals with CMP to maintain their necessary health status and remain in the labour market.
- 3 In the early stages of the disease, finance mental or psychological support services to facilitate acceptance of diagnosis and motivate people with CMP to be more adherent.
- 4 Establish multidisciplinary teams, including psychological support providers whose assistance would be especially significant immediately after diagnosis.
- 5 Organise educational seminars on the psychological challenges and emotional needs of people with CMP for primary care physicians, psychological support specialists, and other specialists who work daily with this group of people.
- 6 Create a website that consolidates information on common conditions that cause CMP treatment options, facilities that offer services, information on patient organisations, and other important topics relevant to CMP patients. This would reduce the anxiety related to misinformation and the reliance on unverified information.

A good example of such a website is www.parsirdi.lv.

- 7 Develop a mobile application designed for people with CMP, where they could create local communities to exchange information or organise gatherings based on their location. The app could help track positive habits and provide recommendations on suitable diets for this group of people, along with other useful information.

For family members of people with CMP

- 1 Treat a family member with CMP not as incapable and avoid doing things for them that they can do themselves to prevent learnt helplessness while providing support in household situations that they struggle with due to limitations of the illness.
- 2 Considering that pain may not always be apparent from the outside, frequently enquire about the well-being of the family member and what kind of support they might need.

For people with CMP

- 1 When facing uncertainty, difficulties accepting the illness, or feelings of hopelessness at the onset of the disease, it is important not to endure suffering alone but to seek informational and emotional support from patient organisations and psychological support specialists.
- 2 Implementing a comprehensive approach to pain management should include not only medication therapy but also lifestyle changes such as altering sleep and dietary habits, engaging in physical activities that accommodate the limitations of the illness, employing techniques related to emotion regulation, and changing thought patterns, among other methods.
- 3 Taking into account that perception of pain is largely influenced by emotional state, as much as possible, reduce stress-promoting factors, for example, by reducing the workload at work or giving up part of the responsibilities at home.

- 4 Engage in activities and hobbies that bring joy and occupy the mind, allowing one to forget about pain.
- 5 Avoid physical activities that can cause overload and lead to prolonged periods of inactivity. Instead, after consulting with rehabilitation specialists, incorporate moderate physical activities into daily routines that can be practised regularly.
- 6 When choosing physical activities, prefer in-person sessions guided by a trainer or physiotherapist over remote sessions where the quality of how the exercise is performed is not monitored.
- 7 When planning daily schedules, prioritise self-care activities, for example physical activities, before scheduling other tasks.
- 8 Keep a pain diary to identify factors (such as daily routine, sleep, diet, emotional state, and various activities) that worsen or relieve pain.
- 9 Maintain a gratitude journal to recognise available resources, opportunities, and positive events in life along with the limitations caused by pain.
- 10 Practice self-compassion. Instead of asking “Why did this happen to me?” remind yourself that many people are currently facing similar challenges. Avoid being judgemental towards your body and mistakes, and ask yourself, “What is the best I can do for myself in these circumstances?”
- 11 Schedule preventive visits to the doctor and attend rehabilitation sessions without waiting for pain to increase.

Publications

- 1 Zelčāne, E. & Pipere, A. (2021). Hronisku slimnieku dzīvesspēks: Darbības jomas pārskats [Resilience of Chronically Ill: a Scoping Review]. *Society. Integration. Education. Proceedings of the International Scientific Conference*. 7, 239–248. DOI: 10.17770/sie2021vol7.6176 (WoS)
- 2 Zelčāne, E. & Pipere, A. (2023). Finding a path in a methodological jungle: a qualitative research of resilience, *International Journal of Qualitative Studies on Health and Wellbeing*, 18(1), 2164948, DOI: 10.1080/17482631.2023.2164948 (SCOPUS, Q1)
- 3 Zelčāne, E. & Pipere, A. (2024). Maintaining resilience over time: A qualitative exploration of the experiences of living with chronic musculoskeletal pain. *Musculoskeletal Care*, 22(2), DOI: 10.1002/msc.1913 (SCOPUS, Q2)

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- 1 Zelčāne, E., Pipere, A. (26.07.2024). *Building resilience in the face of chronic musculoskeletal pain*. Oral presentation at the International Congress of Psychology, Prague.
- 2 Zelčāne, E., Pipere, A. (13.04.2023). *Slimnieku ar hroniskām muskuloskeletālām sāpēm dzīvesspēka veidošanās un uzturēšana. Tematiskās analīzes provizorisks rezultāti [The Formation and Maintenance of Vitality in Patients with Chronic Musculoskeletal Pain: Preliminary Results of Thematic Analysis]*. Mutisks referāts 9. starptautiskajā zinātniski praktiskajā konferencē “Veselība un personības attīstība. Starpdisciplināra pieeja”.
- 3 Zelčāne, E., Pipere, A. (30.03.2023). *Resilience in people with chronic musculoskeletal pain: preliminary results of the thematic analysis*. Oral presentation at RSU Research week 2023.
- 4 Zelčāne, E., Pipere, A. (08.07.2022). *A multidimensional study of resilience: integrative approach to qualitative data analysis*. Oral presentation at the European Psychology Congress, Ljubljana.
- 5 Zelčāne, E., Pipere, A. (21.04.2022). *Slimnieku ar hroniskām muskuloskeletālām sāpēm dzīvesspēka veidošanās un uzturēšana. Kvalitatīva pētījuma metodoloģiskie risinājumi [The Formation and Maintenance of Resilience in Patients with Chronic Musculoskeletal Pain: Methodological Solutions of a Qualitative Study]*. Mutisks referāts 8. starptautiskajā zinātniski praktiskajā konferencē “Veselība un personības attīstība. Starpdisciplināra pieeja”.
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- 7 Zelčāne, E., Pipere, A. (22.03.2021). *Resilience Development Strategies of the Chronically Ill: Theoretical Insight*. Oral presentation at RSU Research week 2021.

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Annexes

Ethical Approval

APSTIPRINĀTA
ar Rīgas Stradiņa universitātes rektora
2018. gada 26. septembra rīkojumu Nr. 5-1/238/2018

**Rīgas Stradiņa universitātes
Pētījumu ētikas komitejas
LĒMUMS
Rīgā**

30.06.2021 22-2/384/2021

	Komitejas sastāvs	Kvalifikācija	Nodarbošanās
1	Profesors Jānis Vētra	Dr.habil. med.	Morfologijas katedra
2	Asoc. Prof. Zanda Daneberga	Dr.med.	OI Molekulārās ģenētikas laboratorijas vadītāja
3	Asoc. Prof. Anita Vētra	Dr.med.	Rehabilitācijas katedras vadītāja
4	Profesore Ingrida Čēma	Dr.habil. med.	Mutes medicīnas katedras vadītāja
5	Docente Anna Junga	Dr.med.	Morfologijas laboratorijas vadītāja
6	Pētniece p.i. Karina Palkova	Ph.D.	Advokāte, Doktora studiju programmas vadītāja
7	Marina Siņkova		Datu drošības un pārvaldības daļas vadītāja

Pieteikuma iesniedzējs/i: **Elina Zelčāne, Doktorantūras nodaļa**

Pētījuma / pētnieciskā darba nosaukums: Dzīvesspēka uzturēšanas ilgtermiņa stratēģijas cilvēkiem ar hroniskām muskuloskeletālām sāpēm

Pētījumu ētikas komitejas sēdes datums: 27.05.2021.

Pētījuma protokols:
Izskatot augstāk minētā pētījuma pieteikuma materiālus (protokolu) ir redzams, ka pētījuma mērķis tiek sasniegts veicot dalībnieku intervēšanu, iegūto datu apstrādi un analīzi, kā arī izsakot priekšlikumus. Personu (pacientu, dalībnieku) informēta brīvprātīga piekrišana piedalīties, personu iegūto datu apstrāde un aizsardzība, to pielietošana, glabāšana, anonimitāte un konfidencialitāte ir nodrošināta. Līdz ar to pieteikums atbilst pētījuma ētikas prasībām.

Komitejas lēmums: **Piekrist pētījumam**

Komitejas priekšsēdētājs Jānis Vētra Tituls: Dr.habil. med. profesors

Participants' socio-demographic characteristics

Participant	Self-identified sex	Age	Diagnosis	Employment
1	Male	56	Spondylosis	Employed
2	Female	58	Rheumatoid arthritis	Employed
3	Female	55	Rheumatoid arthritis, osteoporosis	Employed
4	Female	52	Sjogren's syndrome	Employed
5	Male	53	Spinal cord injury	Unemployed
6	Female	29	Rheumatoid arthritis	Employed
7	Female	63	Unspecified joint pain	Self-employed
8	Female	55	Disc herniation	Employed
9	Female	56	Rheumatoid arthritis	Unemployed, looks after grandchildren
10	Male	32	Psoriatic arthritis	Employed
11	Male	39	Nonspecific back pain	Employed
12	Female	59	Spondylosis	Unemployed, looks after grandchildren
13	Male	32	Spinal cord injury	Self-employed
14	Male	35	Spinal cord injury	Self-employed
15	Female	51	Spinal cord injury	Employed
16	Male	64	Nonspecific back and joint pain	Employed
17	Female	44	Disc herniation, osteoporosis	Employed

Interview questions

Interview Questions	Data Analysis Method
<p>Tell me more about your pain! How long have you lived with it and how does it impact your daily life? (RQ1, RQ4)</p> <p>How would you describe the overall period of your life since the appearance of pain? (RQ1, RQ3, RQ4)</p>	<p>Thematic analysis allows us to identify topics that people talk about when recalling the development of resilience and describing the current situation.</p> <p>Narrative analysis allows one to describe the dynamics of the experience.</p>
<p>What did you do when you first experienced pain? (RQ1, RQ2)</p> <p>Did you use specific methods or techniques to reduce the impact of pain on your life? (RQ2)</p> <p>How did you come to this method/technique? (RQ2)</p> <p>Were there any strategies that helped more and others that didn't help at all? (RQ2)</p>	<p>Thematic analysis allows us to identify the main obstacles and contributing factors that people talk about.</p> <p>Narrative analysis allows one to understand which factors dominate at different stages of the disease.</p>
<p>If you look at the time you live with chronic pain, how did your chosen methods change? If you remember, tell me everything you have tried to prevent pain or mitigate its negative impact on your life! (RQ3)</p> <p>What events, people, or internal conditions, in your opinion, influenced these changes? Please, describe it in more detail! (RQ3)</p>	<p>Thematic analysis allows us to identify the main changes that people talk about.</p> <p>Narrative analysis allows one to describe the dynamics of the experience or the sequence of change. It allows us to understand how these changes are related to other life events.</p> <p>The critical incident technique allows us to answer the following question: Which internal processes or external events have been a turning point that significantly changed people's lives?</p>

Interview Questions	Data Analysis Method
<p>Which of the methods are you considering the most important and lasting for yourself? (RQ4, RQ5)</p> <p>In what moments of your life do you find it easier to adopt this method, and in which moments is it more challenging? (RQ4, RQ5)</p> <p>Do you remember any turning points after which your life or attitude changed significantly? (RQ3)</p> <p>Tell me about the aspects of your life that have not changed significantly since the onset of the illness! (RQ4)</p> <p>If you had to describe your pain experience from its beginning to this moment using a metaphor, what would it be? Why did you choose this metaphor? (RQ1, RQ3, RQ4)</p>	<p>Thematic analysis allows one to identify the topics that people talk about and find common long-term strategies.</p> <p>Narrative analysis allows one to describe the dynamics of the experience or how short-term solutions become long-term solutions.</p>
<p>Is there anything else you would like to say that was not asked? (RQ1, RQ2, RQ3, RQ4, RQ5)</p>	<p>Thematic analysis allows for the collection of other important information that was not previously mentioned.</p>

Focus group questions

1st block: Formation of resilience. Contributing and hindering factors

- 1 In your opinion, how might a person's attitude towards pain be influenced by the amount of life difficulties they have had to overcome so far?
- 2 What significance, in your opinion, does the experience of coping with difficulties have in one's attitude towards pain, specifically in terms of how much a person has or has not succeeded in resolving various life challenges so far?
- 3 Interviews revealed that attitudes towards pain and the limitations it causes are influenced by the age at which the pain appears. Please share your thoughts on how the age at which pain appears could affect a person's attitude towards it.
- 4 Some study participants admitted that they do not allow themselves to be weak and live with the belief 'I must be strong despite the pain.' What, in your opinion, are the advantages and disadvantages of such an attitude.
- 5 In your opinion, how does a person's self-esteem influence their willingness to take care of themselves and their ability to prioritise their own needs?
- 6 How do you think a person's decision-making could be influenced by their lack of sufficient and reliable information about the causes of pain?
- 7 Some participants in the study noted that they are more conservative and stick to proven methods, while others indicated they are more open to new approaches. How do you think a person's openness or conservatism could affect their self-care?
- 8 What might be the benefits of psychological support compared to the support provided by family and friends?
- 9 What might be the benefits of support from other patients compared to the support provided by family and friends?
- 10 How do you think support from family affects and hinders individuals suffering from chronic pain?

2nd block: Changes in resilience over time

- 11 Interviews revealed that as pain intensity increases, a person becomes more motivated to take care of themselves and seek various pain relief methods. However, when the pain becomes very severe, the opposite often occurs – the person frequently falls into hopelessness. How would you comment on this? What might be the relationship between the intensity of pain and a person's motivation to care for themselves?
- 12 There is a saying that in situations where we cannot change the circumstances, we can change our attitude towards them. How do you think a change in attitude and thinking could impact the effect of pain on a person's life?

- 13 In your opinion, how significant is the role of hope for recovery when dealing with illness? What happens if hope for recovery is lost?
- 14 Several study participants acknowledged that acceptance of the illness occurs when a person stops focusing on what has been lost and instead directs energy toward preserving what remains. How do you interpret this?
- 15 The interviews revealed that in the early stages of illness, pain is often perceived as an enemy, and attention is focused on the limitations caused by pain. However, as the illness progresses, people begin to see pain as an ally with whom they can find a common language and from whom they can even learn something valuable in life. How would you comment on this?

3rd Block: Maintaining resilience long-term. Contributing and hindering factors

- 16 Study participants acknowledged that maintaining long-term resilience against challenges posed by pain requires regular physical activities adapted to their health condition. In your opinion, how important are physical activities in the long term? And does it matter whether these activities are conducted in-person or remotely?
- 17 The study participants who are unable to work due to pain acknowledged the importance of finding activities or hobbies and planning their daily routine to keep their minds occupied and reduce the foreground presence of pain. How would you comment on this?
- 18 The interviews revealed that stress and poor emotional well-being exacerbate pain and hinder adaptation to illness. How do you evaluate the impact of stress and emotions on pain?
- 19 Some study participants acknowledged that financial constraints, such as lack of funds for rehabilitation, pool visits, or trips to other climates beneficial for health, are hindering factors for long-term coping with pain and self-care. In your opinion, how crucial are finances in maintaining health?
- 20 Some study participants acknowledged that exploring and enriching their spiritual world makes it easier for them to come to terms with the physical limitations caused by pain. How would you comment on this?

Conclusion

Perhaps some participants have additional comments or reflections they would like to share?