



LAPIN YLIOPISTO
UNIVERSITY OF LAPLAND

Edīte Millere

**“Designing a healing garden in Latvia using
service design principles for women aged
35-64.”**



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Author: Edīte Millere

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ABSTRACT

This research addresses the need for restorative environments tailored to the well-being of Latvian women aged 35–64 by developing a service design-informed conceptual healing garden plan. The primary objective is to identify this demographic's specific needs and wellness expectations, explore the principles of healing garden design within a Latvian cultural and ecological context, and apply service design methodologies to create a user-centred garden concept for a site in Engure, Latvia.

The study employs a mixed-methods approach. Initial exploratory case studies and a comprehensive literature review establish the theoretical foundations of healing gardens, including the Attention Restoration Theory and Stress Reduction Theory, and their relevance to the target group. Qualitative data is gathered through a co-design workshop with representative users and experts to understand their needs, preferences, and perceptions of restorative spaces. Quantitative and qualitative data are collected via online survey (n=229) to validate and expand upon these insights, exploring stress levels, nature engagement, and preferences for garden aesthetics and features. Thematic analysis interprets qualitative data, while descriptive statistics informs the quantitative findings.

Key findings reveal a strong preference among Latvian women for natural, unstructured garden aesthetics, coupled with a need for both private spaces for solitude and communal areas for connection. Multi-sensory elements, particularly water features and comfortable seating, are highly valued. Notably, the study identifies a potential initial discomfort with complete silence among urban dwellers, suggesting a need for a gradual introduction to tranquillity. Furthermore, participants are more inclined to engage with healing gardens through structured activities, highlighting the importance of a "garden as a service" model, given a low initial awareness of the concept.

The research demonstrates the practical application of service design principles, such as user-centredness and co-creation, in developing a culturally relevant and needs-based garden concept. The implicitly proposed user-centred design process model offers a replicable framework for future therapeutic landscape projects. The study concludes that there is a significant opportunity for healing garden services within Latvia's social service sector. Future research should focus on implementing and long-term evaluation of such gardens, exploring their impact on well-being across diverse demographics and cultural contexts, and investigating the effectiveness of specific design elements and integration within healthcare systems.

Keywords: service design, healing garden, garden design, women's wellbeing, stress

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ABBREVIATIONS AND GLOSSARY

AHTA- American Horticultural Therapy Association

ART - Attention Restoration Theory

EU - European Union

NHS - National Health Service (United Kingdom)

SIF - Sabiedrības Integrācijas Fonds / Society Integration Foundation (Latvia)

TENK - Tutkimuseettinen neuvottelukunta / Finnish National Board on Research Integrity (Finland)

WHO - World Health Organisation

UK - United Kingdom

1. INTRODUCTION

1.1. Background of the research

Throughout history, nature has profoundly influenced human well-being, offering sustenance and emotional nourishment. Gardens, as intentionally cultivated spaces within nature, have a long and significant history. References to the Garden of Eden in the Bible and the evolution of gardens in Roman times (Marcus & Sachs, 2014; Nicolaescu, 2021; English Heritage, n.d.; Wickham, 2012) illustrate a historical shift from purely utilitarian spaces to those that also cater to the human spirit. This historical perspective underscores the enduring role of gardens as places of respite, rejuvenation, and joy.

This intrinsic connection between humans and gardens persists in modern-day Europe, where a significant majority actively engage in gardening, dedicating considerable time to these green spaces within or adjacent to their homes (Coisnon et al., 2019; Galaxus, 2024). Notably, contemporary European gardening trends for 2025 reveal a growing recognition of gardens beyond their productive or aesthetic value, emphasising their potential for fostering wellness. Alongside edible produce, urban gardens, and gardening for leisure (Barter, 2024), the transformation of gardens into "personal sanctuaries that provide a retreat from the demands of daily life" is a prominent trend, explicitly for relaxation and mental well-being (The Balcony Garden, 2025). This increasing focus on the therapeutic aspects of gardens is particularly notable in the context of pressing global challenges, such as climate change and a concurrent mental health crisis. The COVID-19 pandemic, for instance, triggered a substantial 25% global increase in anxiety and depression (World Health Organization, 2022), a trend mirrored in Europe where a significant portion of the population (46%) reports experiencing emotional or psychosocial issues (European Commission, 2024), and alarmingly high rates of stress and depression are reported among women in Latvia (Centre for Disease Prevention and Control of Latvia, 2023). In addition, the prevalence of loneliness has increased globally, with 24% of the world's population experiencing feelings of "very lonely" or "fairly lonely" (Gallup & Meta, 2023). Notably, this number is even higher in Latvia, at 29% (Gallup & Meta, 2023). These converging trends underscore the urgent need for diverse and accessible mental health and well-being solutions, particularly at the preventive level, to address the increasing burden of cognitive and psychological distress. Within this critical intersection of gardening and mental well-being, healing gardens – intentionally designed green spaces promoting physical, cognitive, and emotional health –

offer a compelling and nature-based avenue for intervention. Therefore, this research aims to explore the design of a healing garden in Latvia, utilising the five key service design principles.

When discussing a green space specifically designed to facilitate recovery from mental, physical, and emotional conditions while fostering a deeper connection between humans and nature, one refers to healing gardens (Nicolaescu, 2021). Unlike conventional gardens, healing gardens are designed to meet specific user needs, providing solitude, encouraging social interaction, and stimulating the senses through intentional plant selection. While Hazen (2013) outlines six defining characteristics of therapeutic gardens - enclosed spaces, encouragement of movement, opportunities for solitude or socialisation, sensory-focused plant selection, interactive plant varieties, and planned activities -, these can also be applied to healing garden design to achieve the goal of facilitating recovery from mental and emotional conditions while fostering a deeper human-nature connection. When carefully integrated, these elements enhance the therapeutic potential of the space, enabling it to function as a healing element.

“(.)the relationship that is formed with plants and the earth is unique to gardening. A close contact with nature affects us on different levels; sometimes we are filled with it, fully present and conscious of its effects, but it also works on us slowly and subconsciously in a way that can be particularly helpful for people suffering from trauma, illness, and loss.”

(Stuart-Smith, 2020, p.14)

For the purpose and scope of this research, a healing garden is defined as a passive, restorative garden that allows individuals to come to terms with their feelings while being in a space that follows Hazen’s six defining characteristics of a therapeutic garden.

Designing effective healing gardens requires an in-depth understanding of the target group and collaboration among specialists, including landscape architects, healthcare professionals, and psychologists. Co-design — an approach that actively involves users in the design process — offers a promising method to ensure that these gardens effectively meet diverse user needs. As Sanders & Stappers (2008) argue, co-design extends beyond traditional user-centred design by directly incorporating users’ experiences and insights, resulting in more meaningful and functional spaces. While co-design has been widely applied in healthcare and urban design (Manzini, 2015), its specific application in healing gardens

design remains underexplored. This thesis seeks to address this gap by investigating how service design principles can inform the co-design process of a healing garden for Latvian women.

This research adopts a context-dependent and socially constructed perspective, acknowledging that reality is shaped by subjective experiences and social interactions rather than being purely objective. The epistemological foundation of the thesis is positioned as pragmatism, with elements of interpretivism. Interpretivism facilitates an examination of how personal and collective experiences shape the design of healing gardens, while pragmatism ensures that design decisions remain applicable and practical within the real-world constraints. Methodologically, this study employs a mixed-methods approach, with a strong emphasis on qualitative research methodology, integrating an exploratory case study, co-design workshops, surveys, and thematic analysis. These methods enable a profound understanding of user needs and preferences, ensuring that the final garden design is not only theoretically informed but also practical, feasible, and sustainable. Furthermore, as the author is both a designer and future maintainer of a healing garden, this research also balances academic inquiry with practical implementation, bridging theory and practice within a service design framework.

1.2. Research Motivation

Driven by this understanding of the therapeutic potential of healing gardens and the need for innovative solutions in Latvia, the following section outlines the personal motivation behind this study. The research interest in designing a healing garden stems from the author's personal experience and need. As a member of the target age group, I have also experienced burnout, and in recent years, I have found solace in my garden as a way to cope with my stress and anxieties. During the COVID-19 pandemic, my husband and I purchased a property situated directly on the Baltic Sea, which happens to be significantly larger than a family of five would ever need. We have always envisioned sharing it with a broader community. Still, we were uncertain about the best format for doing so. When considering my thesis topic, I also thought about the issues I wanted to discuss with people around me over a year; gardening was one of them. Moreover, simply asking people a straightforward question—what is their relationship to soil, a garden, or gardening—opens up a whole new conversation.



Pictures of the planned garden's location in Engure, Latvia. Author, E.Millere, 2024

The uncertainty about how to use our property in its entirety led me to my research topic, where I aim to investigate, analyse, and understand what it means to have a garden as a service in our backyard, how to design it, and what considerations must be taken into account for such a service to develop. While some services I have created in the past are easier and faster to prototype, test or validate (for example, the green space for seniors in Riga Airport or new self-lead education program for IT professionals), this is a long-term project that allows me to implement, test, and iterate my findings over the forthcoming seasons. This thesis research only covers the first section of the innovation framework created by the Design Council (2005), specifically the 'Double Diamond - Discover and Define' section. These sections include desk research, conversations with users and stakeholders, visual data analysis, surveys, and co-working workshops to inform the problem statement in the initial stage. The anticipated “define” phase aims to reach the “garden layout on paper” stage by the end of this research.

This study aims to develop an innovative design approach for social innovation within the context of social work services in Latvia. Given the limited exploration of gardens in the healing and rehabilitation process within the Latvian social work landscape (Lukevics, 2025), this research seeks to establish a foundation for a novel social innovation (Encyclopædia Britannica, n.d.; European Social Network, n.d.). This initial healing garden design is envisioned as a core element that can be further enriched with additional services and experiences, tailored to meet the evolving needs and demands of users. The author plans to use the resulting design plan to pursue funding through the Latvian Integration Service's call for Innovative Social Services (Sabiedrības integrācijas fonds (SIF), 2024), with the

anticipation of commencing implementation and user testing phases within the subsequent three years. SIF (2024) defines social innovation in the field of social services as “new, effective and sustainable solutions, approaches, models, and services that improve the risk of social exclusion and ensure a person's quality of life,” and outlines eight key characteristics: problem/situation actualisation, the solution’s correspondence with the needs of the target group, innovation within the chosen district/geographical scope, cooperation, effectiveness, sustainability, social impact, and scalability. The primary outcome of this study is the development of an innovative healing garden design tailored to a specific target group. A significant secondary outcome is the exploration and application of service design principles as a novel methodology within the field of social work, thereby contributing to a broader understanding of design for social innovation.

As a service designer, researcher, and aspiring owner of a healing garden, I believe that any service should be universal and accessible to everyone. While I wish to design a garden incorporating braille and accommodating various mental disabilities, I also recognise that this might divert focus from the core user and their needs. In this case study, I am focusing on women in the 35-64 age group and considering their needs, including physical disabilities and ensuring access to services from a wheelchair and other assistive devices.

Ultimately, this research and garden aim to create a space for all women who feel out of place in their own homes, sometimes even in their own lives. It is about creating a third place, informal public meeting places outside of home (first place) and work (second place), for these women to feel safe, meet and connect - either with one another or nature (Dolley 2020).

1.3. Research goals and research questions

This research aims to develop a comprehensive, service design-informed garden layout plan for a healing garden tailored to the needs of women aged 35–64 in Latvia. This study aims to identify the specific needs and stress factors of this target group, explore the typology and benefits of healing gardens, and, finally, develop a detailed garden plan. By integrating service design principles throughout the research process, the study aims to produce a culturally and ecologically relevant garden design that serves as a model for similar interventions across Europe, generating new insights into service design and its

potential to support the planning process for gardens. To achieve this, this author puts forward the following goals:

Goal 1: Conduct a comprehensive needs assessment of Latvian women aged 35–64, identifying key stressors, wellness challenges, and user expectations for the healing garden.

Goal 2: To review and synthesise existing literature on the typology, design elements, and benefits of healing, therapeutic, and wellness gardens, particularly making them culturally and ecologically relevant for Latvia, including researching healing plants best suited for the Baltic seaside.

Goal 3: To apply service design principles, ensuring that the design process is user-centric, participatory, and responsive to the cultural and environmental context of Latvia.

Goal 4: To synthesise the research findings into practical design guidelines, informed by service design principles, for creating healing garden layouts that are culturally and ecologically relevant to Latvia and meet the identified needs of midlife women, exemplified through a conceptual garden plan for Engure.

Research questions, based on the stated goals, are as follows:

1. **In what ways can best practices in service design be effectively applied to inform the design of a healing garden environment in the context of Latvia?**

This question examines the methodology itself, focusing on how service design principles can guide the garden design process. It addresses and explores how best practices in service design can be effectively operationalised to create a healing environment. This research only covers the research and conceptualisation part of the garden design, leaving the testing and implementation part of the healing garden outside of the scope of this paper. Therefore, it also does not fully apply all five service design principles.

2. **What are the primary needs, challenges, and wellness expectations of Latvian women aged 35–64, particularly in the context of stress and midlife transitions?**

This question aims to gather both qualitative and quantitative insights into the lived experiences of the target group, informing design requirements.

3. **What are the key benefits, characteristics and typologies of healing gardens, and how can these models inform the design of a garden tailored for midlife women?**

This inquiry aims to synthesise international and Latvian literature, identifying design elements that promote health and well-being.

By addressing these research questions, the thesis aims to provide a comprehensive analysis of how service design principles, combined with insights from the target audience, healing garden typologies, and culturally relevant botanical knowledge, can be synergised to create a compelling and contextually relevant healing garden for Latvian women in midlife.

1.4. Research scope

This study focuses on Latvia as the geographical context, while acknowledging that the challenges and needs of the target group are consistent across many countries in Europe and outside. The principles underlying the design of a healing garden are not inherently location-specific; instead, variations in plant selection and cultural nuances will reflect the unique characteristics of the chosen locale. Similarly, while service design is a universally applicable discipline, applying specific methods must take into account cultural differences and local norms. This approach ensures that both the design of the healing garden and the employed service design strategies are contextually relevant and sensitive to the unique socio-cultural environment of Latvia.

Design-wise, the scope of this study is limited to the Discover and Define phase in the Double Diamond framework (Design Council, 2005). It focuses on the first diamond in the Double Diamond framework for innovation (Figure 1).

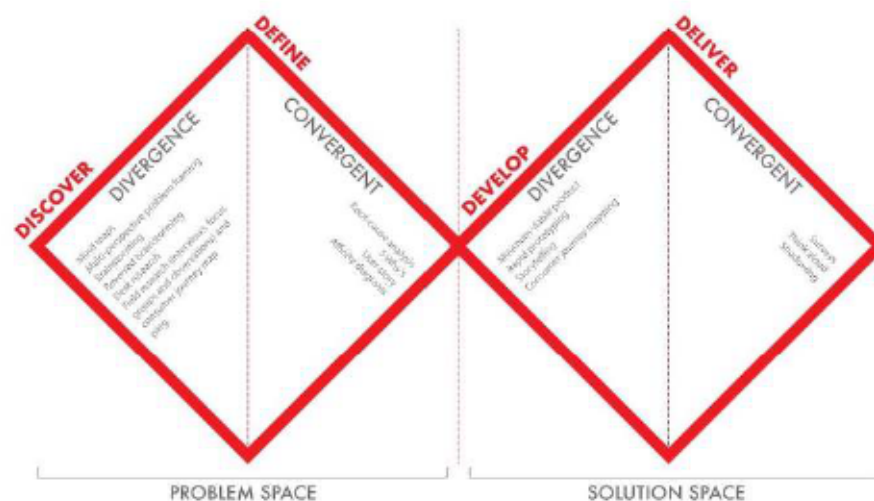


Figure 1: The Double Diamond framework for innovation. (Adopted from the Design Council, 2005). Source: (Elmansy, 2021)

1.5. Contribution of the thesis

This thesis contributes to the field by exploring the application of service design methodologies within the novel context of therapeutic landscape design. It presents a case study in the co-design process of a healing garden concept specifically tailored for Latvian women aged 35-64. It offers valuable insights into the practicalities and potential of user-centred design in creating healing environments. Secondly, the research provides a context-specific needs assessment of this demographic in Latvia, identifying key well-being needs and preferences that can inform future initiatives to enhance mental and social health within this group. Thirdly, the co-created garden layout plan offers a conceptual model for a social innovation that aims to foster a supportive "third place" for Latvian women, potentially addressing issues of social isolation and promoting community well-being. Fourthly, this research synthesises the learnings from the co-design process and the integration of service design and therapeutic landscape principles to propose preliminary guidelines for designing healing gardens. These guidelines offer a framework for other service designers and garden designers seeking to create user-centred healing environments. By integrating service design thinking with principles of restorative landscape design, this research offers a unique perspective on creating user-centred healing environments. Furthermore, it lays a foundation for future research and potential implementation of such spaces in Latvia and similar cultural contexts.

1.6. Thesis structure overview

This thesis paper is structured into seven chapters, beginning with an introduction that provides general information about the thesis topic, motivation, and scope. The second chapter discusses literature reviews on healing gardens, their restorative powers, service design, and the target audience: women aged 35-64. Chapter three - Research design - describes the research methods and data collection process. Chapter four - Results and Findings - is dedicated to data collection and analysis, and summarises the key findings. Chapter five - Design Works - showcases the final result of the research in the form of a Healing garden outline, based on all the input gathered during the research process through various methods. Chapter Six - Discussion and Implications - analyses the findings in correlation with the literature review in Chapter Two and the implications of this thesis research in the broader sense. Finally, Chapter 7 - Conclusion - summarises the thesis research process and findings.

2. THEORETICAL BACKGROUND

This chapter analyses the key concepts for the study, including service design principles, healing gardens, and women in the 35-64 age group, to gain a deeper understanding of the field of study, its application area, and the research's target group. Theoretical background, literature review, and desk research are vital steps in most service design projects that I conduct, as service designers need to familiarize themselves with the field, users, and determine how to apply service design effectively in each case.

2.1. Service design principles

Service design, as a discipline that focuses on creating valuable and usable service experiences, has evolved significantly from traditional design paradigms rooted in the industrial and manufacturing sectors. Initially, the primary emphasis in these sectors was on optimising production processes and maximising outputs, driven by the post-Industrial Revolution imperative to produce more with fewer resources (Freimane, 2017; Vargo & Lusch, 2004). This era often prioritised efficiency and scalability, leading to a situation where, as Dubberly (2011) notes, "(...) problem-framing becomes more valuable than problem-solving" (p. 78). However, the subsequent economic shift towards service-oriented models highlighted the limitations of these purely process-driven approaches when applied to the inherently human-centric nature of services. Recognising this need for a more systematic approach to service development, Lynn Shostack is widely credited with laying the groundwork for service design in the early 1980s.

In her seminal 1982 article, "How to Design a Service," Shostack formally introduced the term "service design" and argued for a structured methodology to address the unique characteristics of services. She argues (p. 49), "Services are rendered; products are possessed. Services can not be possessed, they can only be experienced, created or participated in." She emphasised that services, unlike tangible products, are processes existing in time and require a conscious design effort. Furthermore, her influential 1984 Harvard Business Review article, "Designing Services That Deliver," introduced the concept of the "service blueprint" as a crucial tool for visualising the entire service process from the customer's perspective. This blueprint mapped customer actions, frontstage and backstage employee actions, supporting processes, and physical evidence, providing a framework for understanding and managing the complexities of service delivery. Shostack's work highlighted the need to move beyond

simply focusing on the tangible aspects of a service and to consider the entire customer journey, as well as the underlying organisational processes that support it.

The foundational understanding that design extends beyond tangible products to encompass intangible services is further emphasised by Papanek (1971), who strongly asserts that designers can shape the world, impact people's perspectives, and foster relationships and empathy. This reinforces the idea that design transcends mere aesthetics or visual appeal; it is fundamentally about crafting holistic solutions that are functional, contextually relevant, and meaningful. The true essence of design lies not in its level of innovation, aesthetic refinement, or technological sophistication, but in its capacity to offer solutions that fulfil a meaningful purpose for individuals while remaining practical and effective within their specific context. Building upon this understanding of design's broader impact and the foundational work of pioneers like Lynn Shostack in establishing a systematic approach to service development, the following section will delve into the key principles underpinning service design practice and guide the creation of practical and valuable service experiences.

From a practical application standpoint, Stickdorn & Schneider (2011) identify five foundational principles that underpin effective service design practice: user-centred, co-creative, sequential, evidential and holistic. These principles guide the design process to ensure that services are grounded in real user needs, developed through participatory methods, refined through continuous learning, structured logically, and considered within their broader systemic context. Once the designer understands these, they can determine the best methods to apply the principles in real-life action. Each principle is further explored in detail below.

1. User-centred, sometimes referred to as human-centred service design, is a design approach where the service is designed based on the real needs, expectations, behaviours, and experiences of people who use the service. This means that in the design process, the user needs, behaviours, expectations and experiences are discovered, mapped and considered, then applied in the design work. This helps create a more intuitive, widely used, meaningful, and often inclusive service. Stickdorn & Schneider (2011) and Sanders & Stappers (2008) stress the importance of a participatory design approach involving iteratively engaging users in the design process. The concept of "designing with the user, not just for the user" is a common mantra among academic and practical service designers.

The human-centred principle can be effectively applied through various methods. User interviews allow for in-depth exploration of individual experiences and needs. Surveys, such as the one employed in this study to gather quantitative data on stress levels, time spent in nature, and preferences for garden features, provide broader insights into user patterns. Observation, while potentially resource-intensive, offers valuable contextual understanding of user behaviours. Empathy mapping is a powerful tool for visualising users' thoughts, feelings, and actions, fostering more profound empathy. Ultimately, personas – fictional yet evidence-based representations of target users – are crucial guides for informed design decisions.

This principle addresses the second research question concerning the primary needs, challenges, and wellness expectations of Latvian women aged 35-64. The application of human-centred design, particularly through methods such as co-design workshops and surveys conducted in this study, is crucial to achieving a comprehensive understanding of these needs and expectations, ultimately ensuring the design of a healing garden that is genuinely relevant and beneficial for its intended users.

2. Co-creative

The principle of co-creation emphasises the active involvement of multiple stakeholders – including users, designers, providers, and other relevant actors – throughout the service design process. Moving beyond the traditional designer-as-expert model, co-design positions the designer as a facilitator of change, enabling collaborative settings where diverse perspectives contribute to ideation and decision-making (Manzini, 2015). This democratic approach enriches creativity, drives social innovation, and fosters a sense of shared ownership. By actively engaging stakeholders, the resulting services are more likely to be relevant, high-quality, and sustainable, as individuals are more inclined to support solutions they have helped to create (O'Hern & Rindfleisch, 2010). This collaborative engagement is crucial in recognising the inherent complexity of services, which often span across organisational silos and numerous user touchpoints. Incorporating diverse insights minimises individual biases and leads to more robust and user-centred outcomes.

Some of the methods that support these principles include *stakeholder engagement*, which allows for the identification of those who should be involved in the co-design of a particular project, and *co-design workshops*, which facilitate interactive sessions with users and other

stakeholders to generate ideas, prototype potential garden elements, and make design decisions collaboratively. Similarly, the *participatory design session method*, where users are engaged in more hands-on activities, such as sketching garden layouts, selecting materials, or even planting small elements, helps to foster co-creativity. *Focus groups* give collective feedback and insights on proposed design ideas.

This study conducted co-design workshops and participatory design sessions with users and other stakeholders to develop the garden layout plan and establish the garden as a service concept.

3. Sequential

Service design processes are structured sequentially, reflecting the temporal and logical flow of user interactions with a service. By mapping out the sequence of service touchpoints — before, during, and after service delivery — designers can identify critical moments, optimise transitions, and eliminate inefficiencies or pain points in the user journey (Stickdorn et al., 2018).

Tools such as *service blueprints* and *customer journey maps* help visualise the end-to-end experience and align backstage processes with front stage interactions. Lynn Shostack (1984), in her seminal work on service blueprinting, emphasised the systematic structuring of services as essential for delivering consistent and coherent experiences. A sequential approach also supports cross-functional coordination, ensuring that all actors involved in service delivery are synchronised around the same service narrative. Methods such as *touchpoint analysis* allow for identifying the user's interaction points with the service and optimising each, if needed. For more complex services or specific user groups, a *scenario planning* method helps to understand how they would utilise the service in a new and different way, which is often a way to develop new sales revenues. *Service staging* enables me to plan the physical layout of the service, which I use extensively in this study. For example, I began with a basic, clean layout plan of the property and populated it with various scenarios and service touchpoints.

The sequence principle was applied at the very first ideation session, a co-design workshop with users, where participants drew personas and their journey maps, providing a different perspective on the garden layout and service concept. Understanding the user journey of a woman visiting the healing garden (addressed indirectly by understanding their needs and

expectations in the first research question) helps to structure the garden layout and the potential experiences within it in a logical and meaningful sequence.

4. Evidencing

Evidencing is about making the invisible service somewhat visible, sometimes even tangible. “The value of both tangible and intangible services should be clearly evidenced, as part of the service design experience.” (Sartipi, 2023, p.9) A good example of this principle is a confirmation email or a boarding pass, which provides evidence of an event we experience in the travel industry. Or the calm feeling when one enters a spa zone. The interior and decor create a certain brand recognition and give quality assurance to the price one has paid for the service.

This has been discussed a lot in the open ended questions in the user survey, asking them to describe the garden that would make them feel calm, pick a picture that represents that feeling, etc. This has helped in designing the overall mood board for the garden, which is a side product for the garden layout at this stage of the garden development.

5. Holistic

Ultimately, the holistic principle prompts designers to consider the broader context in which a service operates, encompassing emotional, cultural, social, spatial, and technological dimensions. Services are not experienced in isolation but are shaped by interconnected systems, environments, and relationships. Holistic design accounts for both tangible elements (such as physical environments) and intangible ones (such as atmosphere, emotions, and values), integrating them into a cohesive user experience (Moritz, 2005; Edvardsson et al., 2011).

This systems-thinking perspective aligns closely with the Service-Dominant Logic (Vargo & Lusch, 2004), which sees value as co-created through interactions and shaped by ongoing engagement. Sangiorgi and Ceschin (2019) further emphasise the importance of designing services that evolve in response to user needs and lived experiences. Holistic service design is, therefore, dynamic, adaptable, and inclusive, capable of responding to both individual needs and societal challenges.

To apply this principle, the *ecosystem mapping* method, which involves visualising a broader network of actors, organisations, and factors that influence the service, can be helpful.

Through *stakeholder interviews*, an in-depth understanding of the needs and potential benefits for the various stakeholders and the community can be determined. *Cultural probes*, which utilise creative tasks, enable the elicitation of emotional and artistic responses from users. *Environmental analysis*, especially for a project like a healing garden, can be vital, as it gives a deeper understanding of the specific environmental conditions specific to the location. *Broader scope scenario planning* can provide an overview of wider societal trends and potential future impacts on the service and its users. (Stickdorn et al., 2018)

The principle of holistic service design is directly applied in this study, meaning that I examine not only how service design principles can be used in garden design but also how social innovations can be achieved through a new social work practice in the local community. Environmentally, the land and its specific seaside location have been considered when planning the potential layout, plants, and garden scope.

In summary, the five principles of service design —human-centredness, co-creation, iteration, sequencing, and holism — provide a comprehensive and interconnected framework for designing effective and valuable service experiences. As explored in this section, these principles offer methodological guidance for service innovation and inherently embed considerations for user well-being, collaboration, adaptability, logical flow, and contextual relevance. Applying these principles is particularly pertinent to this research, which seeks to answer how service design can inform the creation of a healing garden in Latvia for women aged 35-64. By adopting a *human-centred* approach, the design will be rooted in this target group's specific needs and expectations. *Co-creation* will ensure their active involvement in shaping the garden's features and services. While the complete *iterative* cycle extends beyond the scope of this initial design phase, the research lays the groundwork for future refinement. The *sequential* principle will inform the garden's layout and flow of experiences. Ultimately, a *holistic* perspective ensures the design is culturally and environmentally suitable for the Latvian context, promoting overall well-being. Ultimately, this study aims to demonstrate how the strategic application of these service design principles can lead to the development of an innovative and contextually relevant healing garden, contributing to the field of social innovation within social work practices in Latvia.

2.2 Healing Gardens: Cultivating Well-being through Nature

In an increasingly urbanised and stressful world, restorative environments are paramount. Healing gardens, thoughtfully designed to engage the senses and foster a connection with nature, offer a powerful approach to promoting mental and physical well-being.

A healing garden is more than simply a collection of plants; it is a thoughtfully orchestrated environment designed to awaken the full spectrum of human senses and cultivate a profound, reciprocal connection between individuals and the natural world. They are intentionally designed environments to soothe the mental and physical wellbeing. Souter-Brown (2014, p. 7) describes healing gardens as “(...) *places to meditate, to sit quietly and chat with friends or to just relax and get away from it all. (...) Healing, soft landscape treatments provide a necessary balance to the harshness of the modern hard landscape and built environment.*” Spending time in a healing garden promotes passive healing by allowing visitors to connect with and sense nature. However, these gardens are beneficial not only during illness but also in preventing health issues by supporting an active, healthy lifestyle and fostering overall well-being.

Rooted in the age-old understanding that immersion in nature fosters physical, emotional, and spiritual well-being, these intentionally created spaces aim to expedite recovery, enhance emotional resilience, and promote a deep sense of unity with the surrounding environment. The belief in nature as a powerful co-therapist has endured from the sacred groves of ancient Greece to the contemporary therapeutic landscapes of modern healthcare (Marcus & Sachs, 2014). The American Horticultural Therapy Association (AHTA) defines healing gardens as “plant-dominated environments including green plants, flowers, water, and other aspects of nature, generally associated with hospitals and other healthcare settings... designed to have beneficial effects on most users” (Diehl, 2017, p. 69).

The term “*healing garden*” is broadly applied to green spaces intended to facilitate a process of recovery and well-being (Nicolaescu, 2021). The term “*healing*” as such indicates, “*heal*” means “*to make free from injury or disease*”, “*to cause (an undesirable condition) to be overcome*”, and “*to restore to original purity or integrity*” (Merriam-Webster's Dictionary, n.d.). This aligns with the World Health Organisation's (WHO) view of “*healing*” as a positive process that results in an individual feeling better physically, mentally, and emotionally than before. Thus, when applied to gardens, it signifies more than mere aesthetic appeal; it implies an environment designed to facilitate this holistic process of recovery and well-being.

This section will explore the theoretical underpinnings of these restorative spaces, tracing their historical roots, defining key terms and typologies, examining their inherent healing properties, and providing examples of their practical application, particularly in supporting the well-being of Latvian women aged 35-64.

2.2.1. The healing properties of the healing gardens

Healing gardens can broadly be categorised into passive restorative and active enabling gardens (Diehl, 2017; Souter-Brown, 2014). Restorative gardens primarily offer passive experiences to improve mental and overall well-being. Sensory gardens, a UK-based term, exemplify this, aiming to "awaken the five main senses by providing a visually pleasing, audible, tactile, scented, and tasty experience" (Souter-Brown, 2014, p. 7). Enabling gardens, including therapeutic gardens, actively involve professionally led, plant-related activities to enhance mental and physical health (Jeffries, 2023). "Therapeutic garden is a space where professionally led and planned plant-related activities take place" (Jeffries, 2023, p. 11), often utilising horticultural therapy, which "uses gardening as a basis for wide-ranging human services, including physical and psychological rehabilitation... and overall health and wellness" (Haller, 2021, p. 121).

The terms '*healing*' and '*therapeutic*' in the context of gardens often explain three general aspects of well-being, including "achieving a degree of relief from physical symptoms or awareness of those symptoms... stress reduction and increased levels of comfort... [and] facilitating an improvement in the overall sense of well-being and hopefulness" (Marcus & Barnes, 1999, p. 3). Landscape architect Ilze Rukšāne (2022, p. 2) argues that "(...) we often don't see the difference in the terms 'healing' and 'therapeutic' landscape, both landscape or garden types are created with an aim, to foster connectivity with a human and nature's healing powers. This connection can be either passive or active, depending on the design and the user's needs."

Therefore, referring to "*healing gardens*", the term signifies more than just a space for physical recuperation. It implies an environment intentionally designed to facilitate overcoming undesirable conditions, be they physical discomfort, mental distress, or emotional imbalance. Furthermore, a true healing garden aims to foster a sense of restored wholeness and integrity, promoting an overall improvement in well-being that encompasses the interconnectedness of mind, body, and spirit. This holistic understanding of healing is

crucial when considering the potential benefits of natural environments for individuals seeking restoration and a renewed sense of well-being.

Numerous examples worldwide demonstrate the application of healing garden principles. 'Thrive' in the United Kingdom, established in 1978, supports an extensive network of therapeutic gardening projects for various populations (Foster, 2002). Their Pathways program specifically benefits women experiencing mental health needs, where "participants can enjoy the therapeutic benefits of being in nature as well as socialising with others, learning about gardening, and having fun" (Thrive, n.d., section Women-only Pathways Programme). One participant described it as *"the chance to stop and feeling that you too are capable of doing things, feeling the sense of rewarding"* (Thrive Charity, 2021).

Another example of a garden's healing properties can be visualised by British General Practitioner Dr Taheri, who now meets her National Health Service patients in her garden, showcasing how nature's power can be incorporated into today's public medical services. "Dr Taheri prescribes the garden to patients as a "therapeutic activity in a friendly and supportive setting" and said since 2022, about 100 patients had benefited." (BBC News, 2024, 2nd para.).

More than aesthetic features, healing gardens serve both individuals and communities. They offer mental and physical health benefits, enhance biodiversity, and even support economic growth through increased property values and local tourism. As Souter-Brown (2014, p. 7) notes, *"Healing gardens heal communities. They not only enhance local aesthetics and biodiversity and improve the mood of the people, but they help build sustainable communities. By boosting tourism and in-bound investment, increasing property values and livability ratings, healing gardens offer benefits to the local economy as well as the local population."* These benefits extend beyond treating illness, offering preventive health advantages by encouraging active, nature-based lifestyles.

While the healing power of nature has been long recognised, and evidence shows that the importance and belief in garden power dates back to ancient times, it was only in the 1980s that a study was conducted to prove the power of nature on well-being and health. Ulrich R. (1984) conducted a study comparing the recovery of post-operation patients who had a window and view towards the park with those who overlooked a brick wall. The group with

the view proved to recover faster than the one without it. Their hospital stay was shorter, they used fewer painkillers and made fewer negative comments towards the nurses.

A study conducted by Kohlleppel et al. (2002, p. 491) in 1999 at three Florida Botanical gardens showed that people benefit from a visit to a nature site, and their stress levels are reduced after their visit. Women were more likely than men to report stress-reduction benefits from visiting botanical gardens. This suggests that gender differences may affect how individuals experience and benefit from nature-based interventions. The study concluded that while self-esteem and perceived health remain the strongest predictors of stress levels, nature-based interventions, such as garden visits, can serve as a critical supplemental coping strategy.

The evidence underscores the significant potential of intentionally designed healing gardens to foster holistic well-being through sensory engagement and a connection with nature. This understanding of their inherent restorative properties and diverse benefits now necessitates an examination of the specific design principles that guide the creation of such therapeutic environments.

2.2.2. The design characteristics/principles of a healing garden

A garden must be intentionally designed with specific principles in mind to facilitate healing and well-being effectively. These principles, identified through theoretical frameworks and supported by empirical research, guide the creation of environments that actively promote restoration.

The potential of the healing garden to restore cognitive function and alleviate mental fatigue is further supported by the well-established Attention Restoration Theory (ART) (Kaplan, 1989, 1995) which highlights “the power of natural settings to help people recover from mental fatigue” (Winterbottom, Wagenfeld, 2015, p.35) and shows “that much of human life requires ‘direct’, ‘hard’ or stressful attention” (Jeffries, 2023, p. 11), which drives people towards the need to restore cognitive and mental functions. The focused, effortful attention required for much of modern life is finite and can deplete, leading to mental fatigue and reduced cognitive performance. Spending time in, or even viewing, natural environments offers an opportunity to replenish this cognitive resource by engaging a different type of attention: effortless or involuntary (Kaplan 1989, 1995).

According to Kaplan (1989, 1995), natural environments possess four key properties that facilitate this restorative effect:

- **Being away:** Providing a sense of escape from routine stressors and habitual activities.
- **Extent:** Offering a scope and coherence that allows for mental immersion.
- **Soft fascination:** Presenting elements that capture attention gently and effortlessly, without demanding directed focus (e.g., the rustling of leaves, the play of light and shadow).
- **Compatibility:** Aligning with an individual's inherent preferences and motivations, making engagement feel natural and enjoyable.

The principle of soft fascination is particularly crucial, as it enables the directed attention system to rest while nature's subtle and intriguing aspects engage involuntary attention. The other three properties serve to enhance and sustain this restorative engagement.

Therefore, the design of the healing garden for Latvian women aged 35-64 can be intentionally guided by these principles to maximise its restorative potential. By creating spaces that offer a sense of "being away" from daily pressures, providing an environment with a discernible "extent" through varied yet cohesive planting and spatial arrangements, incorporating elements of "soft fascination" through carefully selected flora, water features, and natural materials, and ensuring "compatibility" by reflecting local aesthetic preferences and cultural connections to nature, the garden can actively facilitate cognitive restoration. The ART offers a valuable framework for understanding how natural environments and healing gardens can positively impact mental well-being. By consciously integrating ART's core tenets into the design process, we can create a garden that offers aesthetic pleasure and emotional respite and actively supports the restoration of directed attention, a crucial element in managing stress and enhancing overall well-being for the target user group.

Building upon the foundational understanding of restorative environments provided by ART (Kaplan, 1989, 1995) and Stress Reduction Theory (Ulrich, 1983), which highlight the benefits of natural settings for cognitive restoration and stress reduction, practical design characteristics for therapeutic gardens have been articulated. Hazen (2013) synthesised key elements into six characteristics: enclosed spaces, encouragement of movement, opportunities for solitude or socialisation, sensory-focused plant and element selection,

interactive plant varieties, and planned activities. These principles resonate with the core tenets of restorative environments identified in the theories above.

The principle of **enclosed spaces**, as discussed by Gerlach-Spriggs et al. (1998) and Lundquist (2000), emphasises the importance of defining the garden as a distinct "room" separate from the surrounding environment, in other words, creating a sense of safety and "being away". According to ART, physical or natural boundaries develop a sense of safety and psychological separation from everyday stressors, fostering the "being away" aspect that is crucial for restoration. This feeling of being in a secure and defined space allows visitors to disengage from public life, promoting relaxation, a key element in ART and Ulrich's theory. Erik Brandt Dam, a landscape architect (cited in Klint, 2023, para May), explains his garden design for Bispebjerg Hospital in Copenhagen, emphasising the creation of distinct and contained areas within the larger landscape:

"The garden walls create a space in space; these spaces were the landscape architect Glæsel's focus. Inside the gardens, he established a path system that allowed the eye to wander. We re-established the paths and planted rows of sculpted trees and boundary hedges as a way of enhancing the experience of a space-in-space that was so characteristic of Glæsel's gardens."

This concept of 'a space in space,' as Dam articulated, echoes a fundamental principle often seen in effective healing garden design, where defined boundaries contribute to a sense of safety and psychological retreat (Klint, 2023).

As highlighted by Dam, establishing a clear path system aligns with the broader understanding of healing gardens as spaces that encourage gentle movement and exploration, allowing visitors to engage with the environment at their own pace (Klint, 2023). Furthermore, the use of sculpted trees and boundary hedges not only defines spatial boundaries but also contributes to the garden's sensory richness and visual interest, frequently cited as beneficial in therapeutic landscapes.

"A garden gives you a protected physical space, which helps increase your sense of mental space, and it gives you quiet, so you can hear your own thoughts. The more you immerse yourself in working with your hands, the more free you are internally to sort things out and work them through." (Stuart-Smith, 2020, p.13)

In this passage, Stuart-Smith describes my newly discovered sensation in the garden and encapsulates one of the book's core ideas: the unique psychological freedom and clarity that can come from gardening. By describing the garden as a “protected physical space”, which can also be read as “mental space.” Stuart-Smith (2020) suggests that physical engagement in a calming, natural environment fosters a mental state conducive to reflection and emotional processing. This insight is deeply relevant to my research as it highlights how therapeutic garden spaces could offer women in the perimenopausal and menopausal stages a place to manage the stress, anxiety, and introspection often associated with this phase of life. The passage underscores the garden’s dual function as a physical sanctuary and a mental refuge. This combination could be instrumental in designing spaces that facilitate emotional release and promote self-care.

A diverse and engaging environment is essential to encourage movement and curiosity. This aligns with the ART concept of soft fascination, where intriguing elements effortlessly capture attention. As Thomas (2017) suggests, various plants attract wildlife and stimulate multiple senses, supporting the principle of sensory-focused plant selection outlined by Hazen. The intentional design to engage more than the usual five senses (Rukšāne, 2023), some even named 20 to 58, further enriches the experience. Empirical support for the importance of sensory engagement is found in a study on a Japanese healing garden (Kotera et al., 2023), which revealed that diverse sensory stimulation through plants, water sounds, and fragrances significantly contributed to positive emotional responses in visitors. *“Inclusive design (1.) draws no attention to a disability, (2.) is easy for everyone to use, (3.) excludes no one.” (Nussbaumer, 2012, p.177)*

Healing gardens should cater to diverse individual needs by offering opportunities for solitude or socialisation (Hazen, 2013). According to (Stigsdotter & Grahn, 2002) visitors’ mental power needs to be taken into consideration, and they are referring to Graham’s model (Figure 2), which indicates “that experiences of nature affect people differently, largely depending on their life situation. A person's experience of nature will depend on how much he can absorb from the environment and how strong his mental power is.” (Stigsdotter & Grahn, 2002, p. 64)

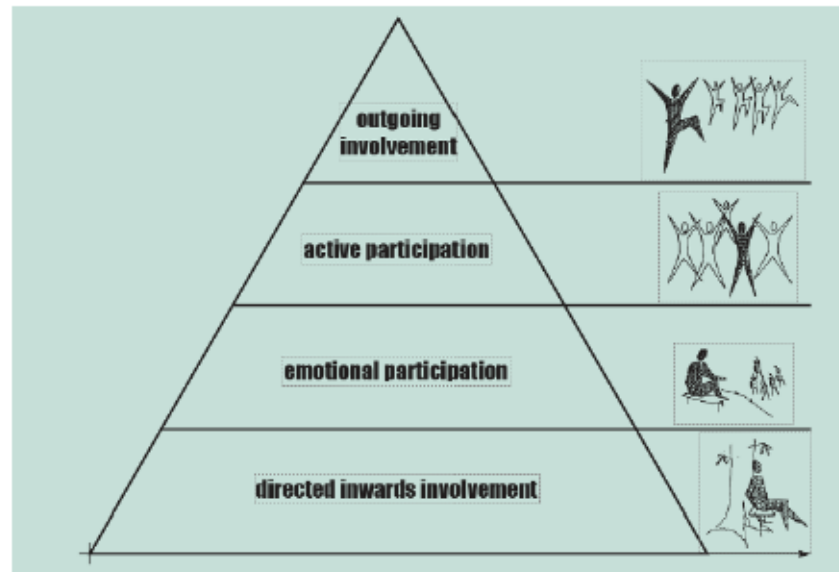


Figure 2: Type of involvement depending on the individual's mental power. Modification of Grahn's model (1991) cited in Stigsdotter & Grahn, 2002, p. 64.

Quiet, secluded areas foster introspection and emotional processing, aligning with the restorative benefits of peaceful natural settings. Conversely, communal spaces can foster social connection and a sense of belonging, contributing to overall well-being. The Japanese healing garden study (Kotera et al., 2023) also noted the importance of quiet spaces for reflection. At the same time, also the importance of socialising is outlined: “social health – wellbeing that comes from connection – is as essential as food and water, but it is vastly underappreciated” (Hobson, 2024), which is even more relevant to the case of Latvia case, given the vast number of people experiencing loneliness every day.

Enhancing Interaction and Purpose: Hazen's principles of interactive plant varieties and planned activities introduce active engagement and purpose within the garden, fostering a sense of purpose and interaction. These can range from tactile experiences with plants to structured horticultural tasks, providing a sense of accomplishment and connecting individuals with the natural environment. While not directly emphasised in ART or Ulrich's initial theories, these elements can contribute to an understanding of compatibility and engagement, potentially enhancing the restorative experience. *“The paths and hedges bring out the intention of the architecture and highlight the mutual relationships among the buildings. It lets you sink into a safe, predetermined order that does not demand any intellectual engagement but is purely sensory. A natural order that did not come about by accident but by design”* (Klint, 2023, para.May).

In conclusion, the design characteristics of a healing garden, articulated by Hazen and supported by theoretical frameworks and empirical studies, such as the one on the Japanese healing garden, provide a comprehensive guide for creating restorative environments. By intentionally incorporating enclosed spaces for safety and "being away," diverse sensory elements to encourage exploration and "soft fascination," opportunities for solitude and socialisation, and elements of interaction and purpose, healing gardens can be powerful tools in promoting physical, cognitive, and emotional well-being.

2.2.3. Healing garden in the Latvian context

To design a healing garden in Latvia for Latvian women aged 35-64, it is crucial to understand the deep-rooted connection of the Latvian people with nature and the specific local environment where the garden is planned. This includes acknowledging historical traditions, contemporary interactions with nature, and the rich heritage of local medicinal plants.

Latvians originate from the Balts, an ancient Indo-European people who have inhabited the Baltic coast for thousands of years. This long history has deeply intertwined their cultural identity with the natural world. Traditionally, the Baltic tribes profoundly respected nature, often viewing it as the ultimate power and a sacred space (Ozoliņš, 2024). This pagan worldview manifested in a close adherence to the solar calendar, marking significant life cycle events with the four solstices: the Winter Solstice (around December 20th, dates vary depending on the long or short year), the Spring Equinox (around March 20th), the Summer Solstice (around June 20th), and the Autumn Equinox (around September 20th). Nature served as a fundamental guide, influencing decision-making and shaping spiritual beliefs (Saprovskā, 2013). This reverence for nature is evident in Latvian healing traditions, where, as Ančevska (2018, p. 137) notes,

"(...)the simplest healing techniques related to the treatment of everyday ailments were passed down from generation to generation within the family circle. These were the skills of recognizing medicinal plants, collecting them at the right time, preparing them for storage and use. These skills were usually only acquired through observing and participating in the work."

This historical reliance on nature's healing properties underscores a long-standing cultural characteristic that persists.

Gardens have historically been an inseparable part of the Latvian homestead, reflecting a deep understanding of the purpose and meaning inherent in each plant and tree. Archaeological and historical evidence reveals a consistent plant selection across homesteads, indicating a shared belief system regarding their significance. Platpīre (n.d.) illustrates this with examples:

“Bread was baked on maple leaves, juices were flowed from birches and maples in the spring, and a favourite birch or maple sap drink was made from them, so as acorn coffee was made from oak acorns. Linden was planted especially for bees, because linden honey is one of the tastiest. Linden flowers were collected for tea, and this tea was used against colds. (...) Rowan was planted to protect the farm from evil spirits and witches. Conifers were not usually planted near ancient buildings because of the lightning strikes.”

These traditions highlight a practical and symbolic relationship with the plant world. Sīle's extensive research emphasises the depth of this traditional knowledge. In her Doctoral study, Sīle (2021) examined over 40,000 Latvian folk beliefs, selecting 1,900 relevant entries and identifying 211 different medicinal plants mentioned within these texts. Significantly, scientific justification for the medicinal effects of 59 of these plants has been found in European monographs, demonstrating the ancient and sophisticated understanding Latvians possessed regarding the healing power of their natural environment.

While many Latvians have migrated to urban centres, resulting in approximately 69.8% of the population residing in cities as of 2023 (Central Statistical Bureau of Latvia, 2024), their connection to nature and the belief in its restorative power remain significant. This enduring link is deeply rooted in Latvia's history and cultural identity, stemming from the ancient Baltic reverence for nature as a sacred and guiding force. This historical symbiosis, where forests and natural elements were integral to daily life and spiritual beliefs (Latvijas Kultūras kanons, n.d.), has fostered a lasting appreciation for the natural world. Even in urban settings, Latvians frequently seek out nature for their well-being, with 72.2% reporting that they often go into nature to find balance for their physical and mental health (Līviņa et al., 2022). This aligns with broader European trends, where a 2021 EU-wide survey indicated that nearly three-quarters of citizens value caring for nature (Becuwe & Baneth, 2021). Furthermore, a study on public opinion regarding nature protection in Latvia revealed that an overwhelming 96.6% of respondents believe it is essential to care for nature, and 72.2% actively use nature

for their physical and mental well-being (Līviņa et al., 2022). This substantial societal value placed on nature suggests that, despite urbanisation, access to and engagement with green spaces, such as healing gardens, can tap into a deeply ingrained cultural preference and offer tangible benefits for the well-being of the target demographic.

Therefore, when designing a healing garden for Latvian women aged 35-64, it is essential to consider this enduring cultural connection to nature, the historical significance of specific plants, and the potential for incorporating local flora with known therapeutic properties, as highlighted by Sīle's research. Understanding this context will allow for creating a healing space that resonates deeply with the cultural and emotional landscape of the target users.

2.3. Women aged 35-64

Women between the ages of 35 and 64 navigate an exceptionally dynamic and demanding phase of life. Often balancing peak career responsibilities, caregiving roles, and significant life transitions — such as marriage, divorce, or bereavement — this demographic also experiences substantial biological changes. The hormonal fluctuations of perimenopause and menopause can cause a wide range of symptoms (Figure 3), including hot flashes, disrupted sleep, memory lapses, mood swings, and cognitive challenges (Brinton et al., 2015).

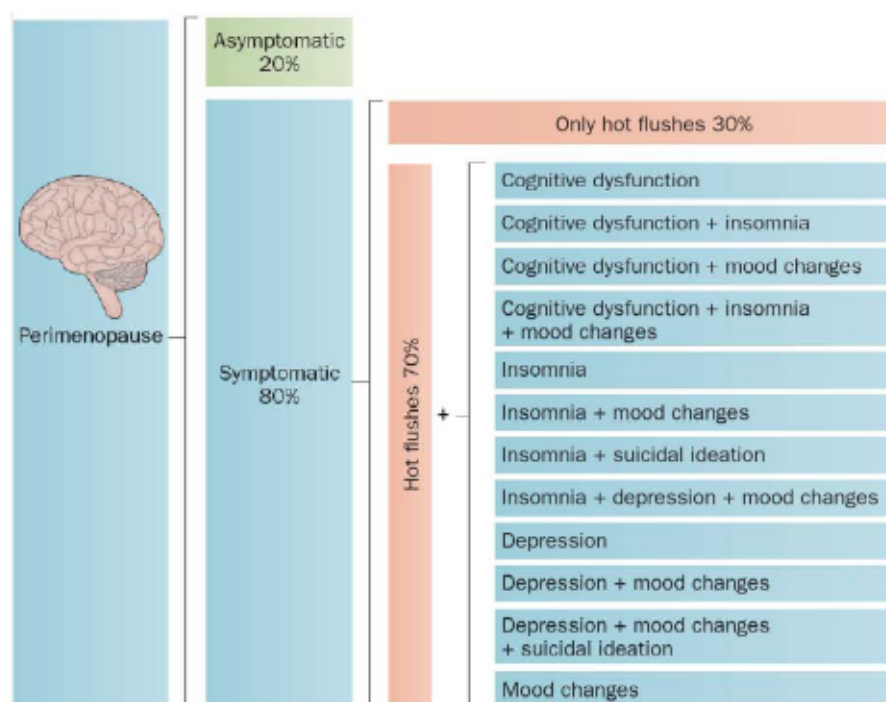


Figure 3: Symptoms during perimenopause. (Brinton et al., 2015, section Transition stages)

While these shifts are widely experienced, they remain under-recognised in healthcare and public policy. Globally, more than 850 million women are currently aged 40–60, and approximately 88% will transition through perimenopause, typically between ages 40 and 58 (Brinton et al., 2015). This transition often coincides with increased stress from career pressures, caregiving responsibilities, and societal expectations. Neurological research confirms that perimenopause is not merely a reproductive event but a full-spectrum transformation that affects multiple estrogen-regulated systems, including circadian rhythms, cognitive processing, and emotional regulation.

In Latvia, as in many other European countries, this age group also faces increasing levels of loneliness. According to the Central Statistical Bureau of Latvia (2024), there are significantly more women than men over the age of 45 (Figure 4), due to gendered differences in life expectancy. This demographic reality increases the likelihood of women living alone during midlife and beyond, which compounds feelings of social isolation.

Population by gender and age groups, 2024

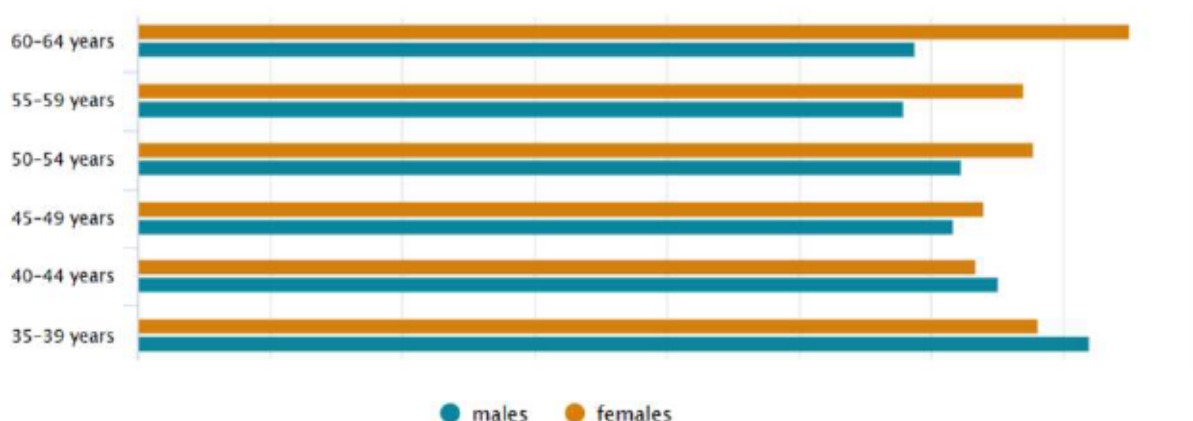


Figure 4. Population by gender and age groups (Central Statistical Bureau of Latvia, 2024).

Recent global data support this trend: the Gallup and Meta (2023) report, "*The Global State of Social Connections*," found that women in midlife often report lower levels of perceived social support compared to younger adults or their male counterparts. This lack of meaningful connection has a direct link to a decline in mental health, well-being, and even physical longevity.

Given these interwoven challenges, women in this life stage urgently need accessible, nurturing, and socially supportive environments. Healing gardens and nature-based interventions offer a compelling solution. As Stuart-Smith (2020) explores in *The Well-Gardened Mind*, engaging with nature, particularly through gardening, can significantly reduce symptoms of anxiety, depression, and trauma. Gardens offer calming, sensory-rich environments that help regulate the nervous system and provide space for connection, solitude, and personal meaning.

Community-based programs, such as Thrive's Pathways Programme in the UK, provide an ideal model for supporting women aged 35–64. These initiatives combine therapeutic horticulture with social engagement, addressing mental health needs in a non-clinical and empowering manner. They reflect what Manzini (2015) refers to as “design for social innovation,” where communities co-create inclusive, restorative, and sustainable solutions.

Ultimately, supporting this demographic is not just a matter of care, but also a matter of strategic social investment. At a time when the leadership potential of these women is flourishing, they are also navigating an inner landscape of biological and emotional upheaval. Many of today's most influential leaders rose to prominence during this exact life stage — Angela Merkel became Chancellor of Germany at 51, Kamala Harris was elected Vice President of the United States at 56, and Christine Lagarde assumed her role as President of the European Central Bank at 63. These women — and many others — demonstrate that midlife is not a time of decline, but a peak period of purpose, power, and possibility.

However, to sustain this rise, comprehensive support systems are critical. Without access to spaces for recovery, connection, and mental restoration, the cumulative stress of societal expectations, hormonal transitions, and leadership responsibilities can result in burnout, early withdrawal from public roles, and a broader loss to society. Jacinda Ardern's resignation from the role of Prime Minister of New Zealand at age 42 serves as a sobering example. Despite her global admiration, her departure was attributed to exhaustion — an all-too-common experience for women in leadership who often lack adequate support (Forbes, 2023).

Suppose society wants to benefit from midlife women's full power, creativity, and emotional intelligence. In that case, it must invest in their well-being through targeted policy, inclusive

design, and accessible therapeutic programs. By doing so, we support individual women and strengthen broader communities and social systems.

2.4. Summary of the literature review

In conclusion, this chapter has established the foundational concepts crucial to this study. By examining service design principles, I have highlighted the importance of a user-centred, co-creative, and holistic approach to creating valuable experiences. Exploring healing gardens has revealed their potential as intentionally designed natural environments that foster physical, emotional, and cognitive well-being through sensory engagement and a connection with nature. Finally, the analysis of women aged 35-64 underscores their unique biological and social challenges, emphasising the urgent need for supportive and restorative environments. The convergence of these theoretical domains presents a significant opportunity: applying service design principles to create healing gardens tailored to the specific needs of Latvian women in this life stage. This interdisciplinary approach promises to develop innovative and contextually relevant solutions that promote well-being and address the identified challenges within this demographic. The subsequent sections will build upon this theoretical framework to explore such a healing garden's design and potential impact.

3. RESEARCH DESIGN

The research design of this Thesis is created following and adapting the Saunders, Lewis, & Thornhill (2019) concept “Research onion.” Figure 5 below presents a schematic view of how this study has been designed, with each part further described in this chapter.

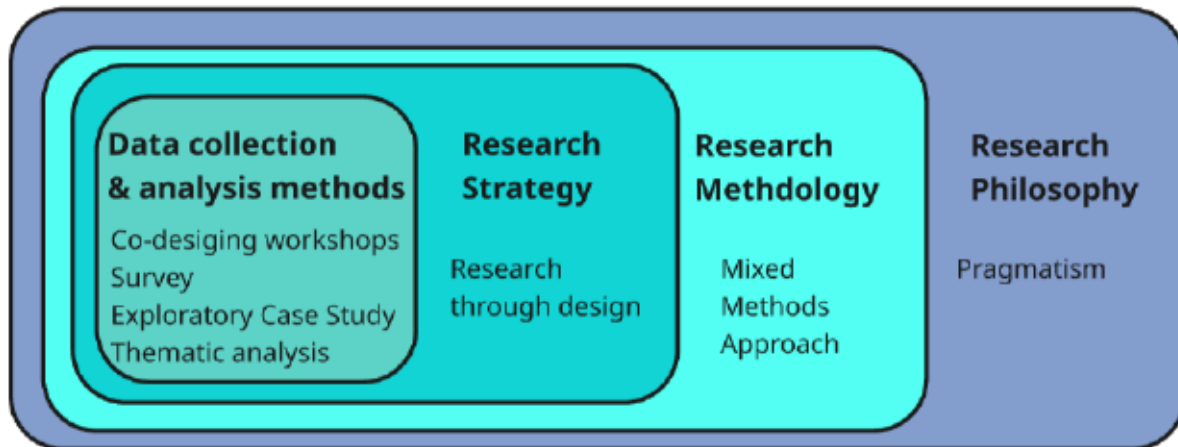


Figure 5. The research design of this research. Author E.Millere, 2025.

3.1. Research Philosophy: Pragmatism

The ontology of this study assumes that reality is context-dependent and socially constructed, rather than purely objective. Subjective beliefs shape human behaviour just as much as objective reality, particularly in the design of healing gardens. What may be effective and meaningful for one individual may not resonate with another, purely due to subjective perceptions and experiences (Cross, 2001). In service design, acknowledging socially constructed realities allows for a more nuanced, participatory approach to problem-solving (Kimbell, 2011).

Looking at the Saunders, Lewis, & Thornhill (2019) “Research onion” (see Figure 6) and “Table 4.3. Comparison of five research philosophies in business and management research” (p. 146), I would argue that the epistemology of this study aligns with pragmatism, with some signs of interpretivism, acknowledging the socially constructed nature of knowledge while also emphasising the importance of practical decision-making.

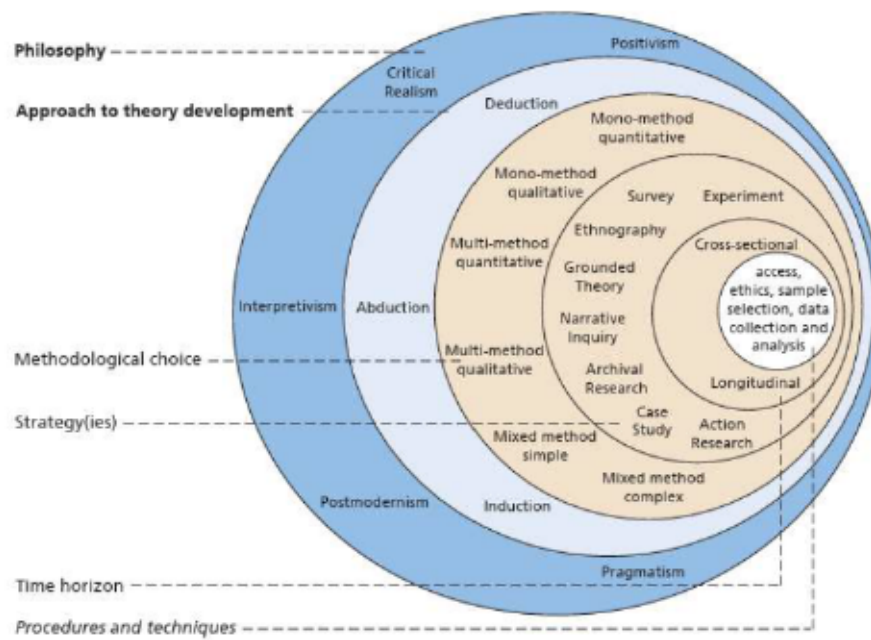


Figure 6: The “research onion”, source (Saunders et al., 2023, p.131)

“Pragmatism is a research philosophy that focuses on practical outcomes and problem-solving rather than adhering strictly to a particular ontological or epistemological stance” (Prime, 2024). Pragmatism emphasises practical outcomes and real-world problem-solving, rather than adhering strictly to a single ontological or epistemological stance (Martin, 2009). It allows for flexibility in design outcomes, including garden layout, stakeholder collaboration, and broader service design applications (Brown, 2009). Through co-design workshops, surveys, and visual data analysis, I recognise that knowledge is created through interaction with participants and stakeholders and shaped through iterative design processes.

Following Manzini (2015), achieving the aim of this study — to develop a comprehensive, service design-informed garden layout plan for a healing garden tailored to the needs of women aged 35–64 in Latvia — requires a pragmatic approach that acknowledges the influence of practical constraints, such as maintenance requirements, climatic conditions, and budget limitations, on the final design. Practical constraints include maintenance requirements, climate factors, and budget limitations. As a researcher, I occupy multiple roles in this study: I am both a researcher and designer and the landowner and future maintainer of the healing garden in question. These overlapping roles require a balance between research-driven insights and actionable, context-specific decisions to ensure a feasible and sustainable design.

In terms of Interpretivism, Saunders et al. (2023, p.150) define it in the following way: *“Interpretivism emphasises that humans are different from physical phenomena because they create meanings. Interpretivists study these meanings. (...) The purpose of interpretivist research is to create new, richer understandings and interpretations of social worlds and contexts.”* From an interpretivist perspective, this research examines how the design of a healing garden is shaped through collaboration with potential clients and user group representatives. Stakeholders contribute their values, needs, and experiences, influencing the final layout plan and the concept of the particular healing garden in Engure, Latvia, through their participation in co-design workshops, surveys and conversations.

This dual-perspective research philosophy of pragmatism and interpretivism in this study integrates the ideals of service design with real-world limitations, bridging theory and practice to create a holistic approach that is both meaningful and implementable.

This study employs both inductive and abductive research approaches. Inductive reasoning allows for theory development from collected data, rather than testing pre-existing hypotheses (Saunders et al., 2023, p.162). As Kennedy & Thornberg (2014, p.130) explain:

“Induction observes individual parts of the unique diversity of the world and attempts to determine rules and laws to order its infinite manifestations. Induction can only hope that the rules ascertained in one limited situation also apply in other contexts.”

In the context of this master's thesis on service design and healing gardens, an inductive approach facilitates the identification of patterns emerging from user interactions, co-design workshops, and qualitative feedback from landscaping and gardening experts.

Abductive reasoning is particularly relevant in service design, as it is a flexible and exploratory approach that allows for iterative refinement of theoretical insights. It is widely used in social sciences, business research, and qualitative studies, especially in service design, where complexity, stakeholder involvement, and iterative design cycles are central (Dorst, 2011; Stickdorn et al., 2018).

“Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth.” (Saunders et al., 2023, p.155).

This research employs abductive reasoning through an iterative process of co-design, where insights from workshops, surveys, and expert interviews inform and refine the concept of the healing garden. The integration of both inductive and abductive approaches ensures that the design process remains both exploratory and grounded in user needs.

3.2. Research Methodology: Mixed Methods Approach

This study adopts a mixed-methods approach, heavily weighted towards qualitative methods, to answer the core research question: *In what ways can best practices in service design be effectively applied to inform the design of a healing garden environment in the context of Latvia?* According to Creswell and Plano Clark (2009), mixed methods is a research approach that involves the collection and analysis of quantitative and qualitative data within a single study. Through the co-design process, surveys, and visual data analysis methods, the research primarily relies on qualitative data analysis, which is a common methodological approach in service design (Brown, 2019). The qualitative analysis is supported by thematic and pattern analysis, ensuring a deeper understanding of user needs and expectations.

However, quantitative elements, such as survey data, are incorporated to validate qualitative insights and provide broader contextual understanding. By combining these methods, the study ensures a robust, well-rounded research strategy that enhances credibility and applicability.

3.3. Research Strategy: Research Through Design

The research strategy for this study is Research through Design (RtD), complemented by elements of participatory action research. This approach is particularly suited to service design and spatial innovation, where knowledge is created through iterative cycles of making, reflection, and user engagement. Research through design generates knowledge not only through written analysis but also through the creation and evaluation of design artefacts, which serve as epistemic tools—tangible manifestations of theoretical, contextual, and user-centred understanding (Zimmerman, Forlizzi, & Evenson, 2007; Interaction Design Foundation, n.d.). Hauberg (2011) explains that design itself is a research method, as it enables the discovery of new knowledge and understanding through designing. This approach reinforces the study's commitment to a pragmatic and interpretivist epistemology, recognizing that knowledge is co-created through interactive and context-specific design processes.

RtD is situated within practice-based research traditions, particularly in creative fields such as architecture and design. According to Hauberg (2011, p. 7), “research by design is research that produces knowledge through the architect’s tools and working methods.” It involves experimenting with real-world contexts and using the design process itself as the central mode of inquiry. This aligns with Frayling’s (1993) influential typology of *research into, for, and through* art and design. In this thesis, the chosen strategy reflects research through design, where new knowledge emerges through practical engagement and is disseminated via design outcomes and reflective documentation.

RtD is inherently transformative and speculative. It is not only concerned with understanding *what is*, but with exploring and shaping what could be (Interaction Design Foundation, n.d.). In this study, the healing garden layout plan is conceived not merely as a designed artefact but as a research vehicle—a physical tool for sketching ideas based on the real property layout, testing various garden layout ideas, and investigating how spatial interventions can support wellbeing.

A key component of this strategy is the use of design artefacts—including mood boards, concept sketches, layout drafts, and visual prototypes—as knowledge carriers. These outputs serve not only as representations of design decisions but also as research instruments that provoke reflection, elicit user feedback, and iteratively guide the design process. Hauberg (2011) emphasises that such material production is a valid and rigorous way of developing insight as long as it is paired with critical reflection, documentation, and contextual analysis.

To support this reflective practice, this study maintained a journal throughout the research process, capturing design iterations, decision-making moments, challenges, and unexpected insights. This aligns with Donald Schön’s (1983) concept of *reflection-in-action*, where designers generate knowledge through continuous dialogue with their materials and context.

In parallel, the research integrates elements of participatory action research (PAR), consistent with service design’s collaborative and user-centred ethos. As Cornish et al. (2023) argue, PAR involves co-creating knowledge with participants directly affected by the issue under investigation. Vaughn and Jacquez (2020) define participatory research as a form of systematic inquiry conducted in partnership with community members to generate knowledge and facilitate positive change. This study is particularly relevant in the context of a healing garden explicitly designed for and with women aged 35–64.

The research is structured into four iterative phases, which mirror the RtD cycle of framing, making, reflecting, and reframing:

- Phase 1—Exploration and Ideation: This phase began by framing the design challenge through literature review, contextual analysis, and early user engagement. It uncovered the garden's emotional, aesthetic, and functional priorities.
- Phase 2 – Validation and Synthesis: Insights from Phase 1 are refined and triangulated through survey research and visual data analysis, allowing for a synthesis of user needs with design theory.
- Phase 3—Refinement and Localisation: Through expert co-design sessions, design concepts are iteratively evaluated and adapted for the Latvian context, considering climate, cultural relevance, and site-specific constraints.
- Phase 4—Reflection and Contribution: This phase documents the research journey, critically evaluates the resulting design, and considers its broader contribution to service design and healing environments.

This phased, iterative strategy enables interactive refinement, practice-based insights, and robust user integration. Grounded theory provides a flexible structure for emergent concepts, while RtD ensures that these are developed and validated through experiential, spatial, and visual inquiry. Combined with participatory elements, this methodology promotes a multidimensional, action-oriented approach to design research, aligning well with service innovation, well-being, and evidence-based placemaking goals.

3.4. Research & Data Analysis Methods

3.4.1. Exploratory case study as a method

Given the early stage of this research and the need to establish a foundational understanding of healing garden design characteristics and existing implementations, an exploratory case study approach was deemed appropriate as a primary research and data collection method. In line with Yin (2018), the aim of this case study was not to provide an in-depth description of a specific phenomenon or to explain causal relationships, as in descriptive or explanatory case studies. Instead, the objective was to broaden understanding of the field, identify key

design elements, and inform the development of subsequent research questions and methods. This aligns with Yin's (2018) description of exploratory case studies as a tool for 'defining the scope and depth of a topic' and 'generating hypotheses for future testing.'

The selection of case studies focused on internationally recognised healing, therapeutic, and wellness gardens in Europe and Canada, representing diverse approaches and contexts. These were explored through readily available digital resources, including documentaries, social media content, research publications, and official websites. While on-site visits were limited due to research constraints, these digital platforms provided valuable insights into the gardens' design philosophies, intended user groups, key features, and reported outcomes. The exploration encompassed gardens with varying scales, target populations, and therapeutic modalities, allowing for a comparative overview of the field.

In addition to these international examples, three public gardens within Latvia were also examined, albeit primarily through online inquiry and a limited site visit (Appendix 2). This local context provided an initial understanding of existing green spaces within Latvia that may incorporate well-being or therapeutic design elements, offering a preliminary point of reference for the subsequent co-design process.

The exploratory nature of this case study phase allowed for a flexible and iterative approach to data collection and analysis. Information gathered from each garden informed the subsequent exploration of others, with emerging themes and design ideas guiding the focus of the investigation. This iterative process, akin to the early stages of Grounded Theory, where initial data informs further data collection, helped to identify recurring patterns, innovative solutions, and potential best practices in healing garden design.

While exploratory case studies are acknowledged for their intuitive approach in studying under-recognised phenomena (Yin, 2018), it is important to note their limitations. The findings from this phase are not intended to be generalisable or to establish definitive causal links. Instead, they serve as a foundational step in mapping the landscape of healing garden design, identifying key variables and considerations, and ultimately informing the development of more focused research questions and the co-design process with the target user group in Latvia. This exploratory phase has been crucial in narrowing down the research, building a foundational understanding, and preparing for the more in-depth qualitative and participatory methods that follow.

3.4.2. Survey

In order to answer the 3rd research question – what the primary needs, challenges, and wellness expectations of Latvian women aged 35–64 are, particularly in the context of stress and midlife transitions – I used surveys to collect this data, in addition to the information found through literature review. The research group for this study are Latvian women aged 34-64, and they were surveyed online.

Surveys are structured data collection tools used to gather self-reported information from participants, often to understand their attitudes, behaviours, perceptions, or experiences. Given their effectiveness in capturing human behaviour, surveys are widely applied in social sciences and psychology (Singleton & Straits, 2009). In service design, surveys are commonly used in the problem-understanding and definition phases, playing a key role throughout the iterative design process: Discover, Define, Develop, and Deliver (Stickdorn et al., 2018).

In this context, surveys serve as both exploratory and evaluative tools. They enable designers to capture a broad spectrum of user insights, such as needs, preferences, and behavioral patterns, which are instrumental in shaping service strategies, creating personas, mapping journeys, or informing co-creation sessions. As Wunder (2023, para. Surveys) notes, "surveys are designed to cumulate a wide range of answers and produce quantitatively measurable and comparable data." However, small-scale surveys can also provide meaningful insights into a target group's unique motivations and challenges.

Surveys can be designed using quantitative methods (e.g., structured questions with Likert scales), qualitative approaches (e.g., open-ended prompts), or a combination of both in a mixed-methods framework. This flexibility allows researchers to collect data that is both measurable and contextually rich (Dillman et al., 2014). *Think. Design* (n.d.) emphasises that surveys are beneficial when researchers understand the topic well and wish to validate assumptions or quantify trends, making them highly suitable for phases such as problem framing and needs validation in service design. Key service design principles include the balanced use of closed- and open-ended questions, piloting the instrument before distribution, and avoiding biased or leading language. It is essential that respondents clearly understand the questions to respond meaningfully to the research.

This study used the survey method to collect data regarding women's needs and preferences for a healing garden. For instance, a question such as "How often do you engage in physical activities (e.g., walking, running, gym)?" helped identify patterns of physical engagement, which informed the inclusion of movement-related design elements in the garden. A visual preference question — "Which of these garden seating options seems more relaxing to you?" (with six image choices) — offered direct input on spatial preferences. These responses enabled data-informed decisions in the design phase. Notably, the survey paired quantitative data with qualitative inputs, offering context such as "*A garden with the least industrial impact. It gives the impression that the garden design is closer to a natural landscape with the least human impact*"(n 128) and "*A garden to organize your inner world*" (n 77), which deepened the understanding of individual choices.

Surveys are also highly efficient and cost-effective, particularly when distributed online via social media. They allow anonymous and non-intrusive participation, encouraging honesty when addressing sensitive topics such as mental well-being or lifestyle habits (Bryman, 2016). However, several limitations must be acknowledged.

One major constraint is the lack of emotional depth in responses, especially in closed-ended formats. In a healing garden context, where sensory perception and emotional resonance are key, surveys may not capture the full richness of user experience (Wright & McCarthy, 2008). Participants may also struggle to envision abstract elements such as nature-inspired design or the acoustic qualities of water features, especially when design literacy is limited. Additionally, survey interpretation poses a challenge: vague responses, such as "It is calm" or "It is comfortable," require contextual support to become actionable insights.

Digital access and inclusivity represent further concerns. For instance, if the target population includes older adults or those with limited digital literacy, distributing surveys exclusively online can lead to discriminating the digitally unskilled. In this research, although the target group was women aged 35–64, only those actively using social media platforms participated, thereby excluding the voices of women outside these networks, which presented sampling bias (Kujala, 2003).

Furthermore, translating survey data into concrete design decisions can be difficult when insights are abstract or subjective. To mitigate this, survey data should ideally be combined

with complementary methods, such as interviews, participatory workshops, or observational research, to validate and deepen findings (Sanders & Stappers, 2008).

In summary, while surveys offer scalability, speed, and a broad view of user needs, they must be carefully designed and critically interpreted. When used in tandem with more immersive, user-centred methods, they can play a valuable role in evidence-based service design processes, including the development of therapeutic environments like a healing garden.

3.4.3. Co-design Method

To assure that goal 3 of this thesis (“To apply service design principles, ensuring that the design process is user-centric, participatory, and responsive to the cultural and environmental context of Latvia”) is achieved and the core “Collaborative” principle of service design is applied, co-design is used as an essential method. There are two respondent groups with which this method was used - the users of the healing garden being designed and experts in the field of landscape architecture, social work, and naturopaths, as they give insight on how the users’ needs can be practically incorporated in the healing garden layout plan.

The first co-design workshop with the users, which I facilitated, took place on November 28th at the upcoming garden’s location and lasted 4 hours with 8 participants. The participants were all women, aged 36-62, some of whom currently have gardens. Many of them work closely with other women in the target group daily. Expert interviews and co-design sessions were conducted in February and March 2025, reaching five experts in social services, landscaping, and gardening sector. Each session lasted 1-3 hours and was held in Latvian.

The co-design method has its roots in participatory design, first adopted in the manufacturing industry during the mid-20th century. Initially, this approach involved experienced experts observing passive users, conducting interviews, and generating reports or data that informed innovations (Sanders & Stappers, 2008). Modern co-design emphasizes active involvement, engaging multiple stakeholders in the design and development of products, services, or systems. The goal is to create solutions that are more relevant, effective, and satisfying for the people who will use them (Hensley, 2023). Manzini (2015) and Sanders & Steppers (2008) argue that within the new discipline of service design, co-design has further blurred the boundaries between the expert and the user, allowing the user to become a designer. A trained designer’s work is to facilitate and enable users with various levels of creativity to

produce relevant results. In 2011, Hugh Dubberly (2011, p. 78), a designer and design thought leader predicted:

“In the new world of information and biology, design must change. Situations where designers design things will become less common. More common will be situations created by participants during use, enabling multiple views. Today’s users will become designers; designers will become meta-designers, creating conditions in which others can design.”

Co-design principles — such as user involvement, collaboration, and inclusivity — are particularly well-suited for therapeutic gardens. These principles ensure that gardens are user-centred, culturally relevant, and emotionally resonant. Co-design shifts the user’s role from passive informant to active co-creator, leading to outcomes that are functional, emotionally meaningful, and tailored to the user’s physical, psychological, and sensory needs (Sanders & Stappers, 2008).

Co-design is also crucial in place-making when various communities and players collaboratively create and maintain the garden, filling it with their work, thoughts, and ideas, leaving and taking emotions, and amplifying the restorative benefits of the place. Manzini (2015, p. 190) gives an example of the Cultivando community vegetable garden at the Politecnico di Milano Bovisa Campus, where “a space without any particular value for residents [has been transformed] into something endowed with meaning, that is, into a place.”

Co-design offers numerous benefits, particularly in developing therapeutic gardens, as it enables the integration of cultural, contextual, and personal elements to ensure these spaces align with users’ identities and values. Dietrich et al. (2017) underscore that co-design empowers users by acknowledging their lived experiences and leveraging their expertise, fostering a sense of agency and inclusivity. This empowerment is particularly valuable in therapeutic settings, where the active involvement of stakeholders, such as patients, caregivers, and community members, can ensure that the design reflects their unique physical, emotional, and cultural needs. Furthermore, participatory design fosters stronger stakeholder buy-in, as participants develop a sense of ownership over the outcome. This heightened engagement often results in spaces that are not only more functional but also more meaningful to those who use them. As Kristensson, Magnusson, and Matthing (2002,

p.55) illustrate, “users produce more original ideas than the company’s professional service developers,” suggesting that the creative potential of user input can significantly enrich design outcomes.

By incorporating users’ insights into what makes a garden restorative, co-design helps create spaces that are better equipped to achieve specific therapeutic goals. Designing for a particular group of users can increase the likelihood that visitors will feel and achieve the intended purpose of the garden (Marcus & Barnes, 1999). This targeted approach is especially crucial in therapeutic garden projects, where the restorative potential of the space hinges on its ability to cater to nuanced and multifaceted user needs. Additionally, co-design facilitates a blending of interdisciplinary expertise, as it often brings together designers, healthcare professionals, psychologists, and users themselves to collaboratively shape outcomes. This interdisciplinary collaboration not only strengthens the relevance of the design but also fosters innovation by integrating diverse perspectives.

Moreover, co-design supports the incorporation of localised and cultural elements, ensuring that therapeutic gardens resonate deeply with their specific communities. Manzini (2015) notes that participatory design fosters social innovation, addressing systemic challenges such as urban disconnection and mental health crises. For therapeutic gardens, this implies creating spaces that not only promote individual healing but also enhance collective well-being, reinforcing community ties and fostering resilience. While the benefits of co-design are abundant, its impact is particularly transformative in therapeutic garden projects, where the alignment of design with users’ identities, needs, and environments ensures a more meaningful and effective outcome.

Despite its benefits, co-design presents several challenges. It is a resource-intensive process requiring significant time, financial investment, and organisational coordination. Gathering diverse participants who accurately represent the user group, facilitating effective discussions, and achieving consensus among stakeholders can be time-consuming and complex. In my recent master’s thesis research, co-designing workshop for therapeutic gardens for women in perimenopausal and menopausal age groups, I made the mistake of asking an open question in the introduction circle about your relationship with a garden. In the given age group, this was a particularly good icebreaker, but also delayed our workshop

by an hour. Furthermore, motivating participants to engage in the process can be challenging, particularly when users are unfamiliar with the facilitator or the co-design process itself.

Another potential limitation is ensuring equitable participation and representation among stakeholders. This imbalance can create dilemmas for designers, who must decide whether to prioritise user input or adhere to professional design standards. Additionally, involving vulnerable populations, such as individuals with cognitive impairments or children, raises ethical considerations. Dietrich et al. (2017) caution that co-designing with vulnerable users requires meticulous planning, execution, and assessment to ensure the process is respectful, inclusive, and effective.

When co-designing therapeutic gardens for vulnerable populations, designers must address ethical concerns related to consent, representation, and the sensitivity of the design process. Structured facilitation, iterative feedback loops, and transparency about the process can help mitigate risks. As Dietrich et al. (2017) point out, ethical considerations are integral to the broader discussion of responsible service design.

Co-design offers significant advantages for therapeutic garden projects, including enhanced user engagement, emotional ownership, and the creation of spaces that are more relevant and effective in meeting users' needs. As Sanders & Stappers (2008) underscore, co-design fosters collaboration and inclusivity, empowering stakeholders to shape solutions that directly affect them. These attributes make co-design particularly valuable for therapeutic gardens, which require a nuanced understanding of users' physical, emotional, and psychological needs (Marcus & Barnes, 1999).

However, the process is not without challenges. Co-design can be time-intensive, resource-heavy, and ethically complex, especially when working with vulnerable populations. Hybrid approaches that combine co-design principles with expert-driven methodologies could help streamline decision-making without compromising inclusivity. As Manzini (2015) aptly observes, when everyone designs, design becomes a tool for collective empowerment, fostering resilience and creativity in service innovation.

3.4.4. Thematic analysis

To explore the open-ended responses to Question 14, where participants shared their associations with the term “dziedinošais dārzs” (healing garden in Latvian), this study employed thematic analysis as the core qualitative method. This approach, as outlined by Braun & Clarke (2006), provided a flexible yet rigorous framework for identifying, analysing, and interpreting patterns of meaning in participants' rich, subjective experiences, capturing both explicit (semantic) and underlying (latent) themes. This was particularly suited to exploring the emotional, sensory, and imaginative connections to nature inherent in the concept of a healing garden.

The analytical process involved both inductive and deductive elements. Initial themes, such as *Miers* (Peace in Latvian), *Sajūta* (Feeling in Latvian), and *Augi* (Plants in Latvian), emerged inductively from the data. Subsequently, these grounded insights were considered concerning existing theoretical frameworks on restorative environments and sensory design, following Flick (2014), to contextualise the findings within the broader academic discourse. This approach ensured a balance between user-driven discoveries and established theoretical understanding.

The thematic analysis provided valuable depth to the study's mixed-methods approach. While quantitative frequency counts highlighted recurring associations, the qualitative interpretation revealed the nuances and underlying meanings behind these associations, enriching the overall dataset and offering more actionable insights than frequency alone.

Importantly, the identified themes provided a user-informed foundation for the future garden design, aligning with participatory and co-creation principles (Ramaswamy & Ozcan, 2012). By revealing the sensory, spatial, and emotional elements most important to the target group, the analysis offers a precise direction for creating a truly responsive healing environment.

While acknowledging the inherent subjectivity in thematic analysis, particularly in theme construction (Nowell et al., 2017), the method's reflexive and transparent application thus allowed for a robust exploration of the participants' perspectives. This analysis of the qualitative dimensions of the survey responses to Question 14, supported by earlier demographic and lifestyle data, aimed to uncover the core emotional, sensory, and spatial associations with the concept of the *dziedinošais dārzs* (healing garden) among Latvian women aged 35–64.

The findings revealed significant associations with emotional peace, natural elements, sensory richness, and an escape from urban life. Key themes such as Peace, Plants, Feelings, and Sound highlighted a desire for spaces fostering calm, aesthetic beauty, and sensory connection, often linked to personal experiences, cultural memory, and emotional well-being. The analysis, grounded in inductive and deductive reasoning and sensitive to the Latvian language and cultural context, provided nuanced user-centred insights that directly inform the design of the healing garden in Engure, Latvia. By grounding the design in lived experience, this research bridges the gap between abstract concepts of healing and tangible, place-based solutions that respond directly to user needs.

3.5. Ethical Considerations and Limitations

The study follows the Finnish National Board on Research Integrity (TENK, 2023) research integrity basic principles—reliability, honesty, respect, and accountability—as well as good research practice. All participants were adults who participated voluntarily and were informed about the nature of the research, its topic, and its scope. Co-designing workshop participants all signed consent forms, allowing their data, including name, age range, and occupation, to be shared and included in the research. All experts interviewed signed a similar form, assuring their names, surnames, and professions could be published. Participants were allowed to withdraw from the study at any time without any disadvantage.

This research is limited by the geographical and data sources available, as there are no healing gardens that meet the defined scope of this study, and the literature on healing space design using service design principles is limited. Also the particularity of the SDSI program, being in two different countries, in the final year of studies, as well as, the master thesis writing period falling in the autumn - winter period, was limiting to exploring more gardens in real life and do user observation or onsite interviews with users, which is still something I would like to do beyond this thesis, as part of the development activity of the Healing garden in Engure .

4. RESULTS

This chapter discusses the processes of data collection and analysis to gather crucial insights for the user-centred healing garden design. It outlines the scope and background of both the target users involved in the co-design workshop and survey, and the expertise and contributions of the professionals participating in the co-design sessions. Following this, the chapter analyses the collected findings from both these groups, presenting the user needs, preferences, and expert recommendations that will inform the subsequent development of the garden plan.

4.1. User-Centred Insights: Findings from the Co-Design Workshop

4.1.1. Participant Recruitment and Background

A co-design workshop with 8 women in the perimenopausal and menopausal age group was conducted, to gather a list of features a garden as a service should have so that women from the target audience would benefit from the service. All the participants were women who currently work with women in the set age group, running some sort of wellness or hobby groups (such as baking classes, yoga, art therapy, etc.) or are enthusiastic gardeners (one participant is a biologist/service designer). Participants were first introduced to the location where the set garden is planned to be in the future, around idea of a healing garden and garden as a service concept. Afterwards, the participants were asked to introduce each other and describe their relationship with a garden in their lives. This took quite a turn, as everyone, even the ones living in a flat, had one or another sort of relationship with a garden, including creating one on the windowsills and, upon a recent house move, realizing the scope of the windowsill garden - 83 pots. Another participant is cultivating a garden in a dune, where her house is located, learning every year what works in the poor seaside soil and windy environment and what does not. Everyone had vivid childhood memories from the soviet era, where grandmothers or parents owned gardens and many summer weekends were spent there planting, weeding and harvesting the goods. Childhood memories were similar to mine, where a garden was a duty, a burden, and hard work. With our adult brain, we can assess that it was a source of income and food for most of our families, though the negative association with gardens stayed. Until we reached 35+, we had a choice to have a garden and how one should have it. Most participants were talking about their gardens with joy and excitement, one could notice how the faces lit up and voices were joyful, as they told stories

about their gardens. There was a sense of pride, an association of relaxation of mind and happy tiredness of the body after hours working in the garden nowadays.

4.1.2. Workshop Methodology and Activities

The first activity was in pairs to create a person (Figure 7), a typical woman who enters their group activities. The four personas came to be similar in that they were from a city, lived in an apartment (often associated with more free time), and either had grown-up children or no children. One persona was a mom with two small children.

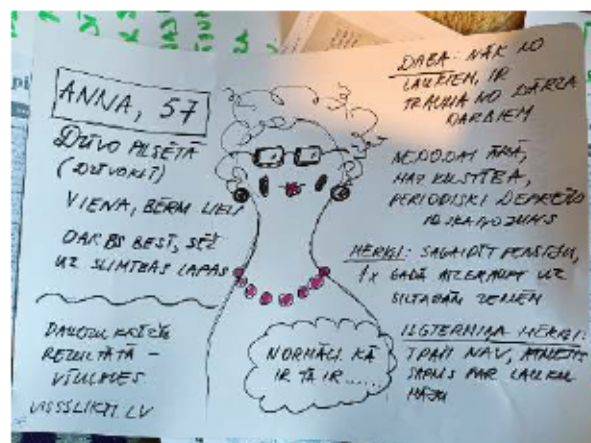


Figure 7: Persona 1 created during the workshop. Authors workshop participants, 2024.

The second activity involved creating a customer journey (Figure 8) in the garden, which led the participant to the third activity, which was designing the particular garden's features on a blank garden location plan (Figure 8).

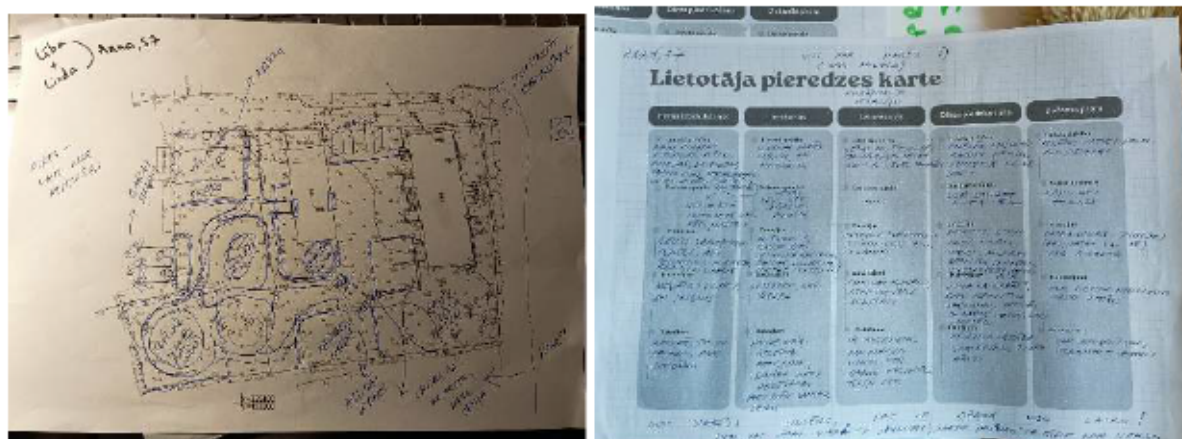


Figure 8: Customer journey map and garden layout sketch. Authors workshop participants, 2024.

All the data was collected on various posters, written in Latvian. The workshop was 4 hours long and took place in November 2024 in Engure, Latvia.

4.1.3. Key User Insights from the Co-Design Workshop

Data was collected through notes from observing the group discussions (though I was also leading them), and three worksheets participants would work with (creating a persona, creating user journey, and identifying key features in the garden layout), as well as, sticky note on the board with “Stinky fish” method, where participants add what definitely should not be happening or included in the garden as a service. Data from the co-design workshop was analysed using thematic analysis, focusing on recurring themes, patterns, and participant priorities as reflected in group discussions and visual artefacts. The grounded theory approach is used in this workshop, as it was set very early on in the research phase, allowing for refining and adopting the research question for the thesis.

As a result, four user personas were created in the workshop. Three out of four were women in their late 30s—early 50s, living in the city, with a fair amount of stress caused by work and their social status. Participants Aiga and Zane described their persona as “in need to find herself again, experiencing empty-nest syndrome, has old habit about living in routine.” Una and Liene mentioned that one of the challenges their persona (40+ city-based with school-aged children) would experience in the garden is the silence. While it is needed, it might come as a stressor in the the beginning, as it is unknown and uncomfortable. Generally, the persona's' activity showed that the target audience would be city-based women needing of escaping their daily routine and reconnecting with nature through various senses. It was discussed multiple times that the garden as a service should have some sort of activity attached to it, as the women would more likely go to an activity that happens in a healing garden than go to a healing garden and attend an activity, if they find one there. That is mainly linked with the common knowledge of the garden as a service idea and lack of knowledge about what a healing garden is, as backed up by the survey data (only 27% of respondents had heard about the term).

Upon creating the user journey for these women, issues like departure from home, mode of travel, and arrival moment were discussed. The onsite experience was discussed through the layout design (not all teams got to this stage), and participants provided general ideas, which were collected via sticky notes. Based on the data gathered, the key features that should be included in the garden as a service are:

- 1) Signs as to what is where. Given the particular location of the set garden, which is located inside a private property, it is vital to indicate which parts are public to enjoy and relax, and which shall be respected as private, to give people a greater sense of security that they do not overstep the privacy of someone else. It was suggested, through multiple comments and notes, that along with signs and indicators, a small, decorative fence or flower bed dividing the zones could be made.
- 2) Given the proximity of the sea, enough time to visit the beach should be planned in the activity schedule or the garden service offer.
- 3) “Place for solitude” and “little pockets to hide” (from workshop sticky notes);
- 4) Organised activities, such as concerts, masterclasses, workshops to create something from natural materials, even a ‘do-it-yourself’ corner for creating crafts;

The key insights include that the average user is a city based women, often in her late 40ties - early 60ties, that for her quietness and stillness, connection with nature is a need, but can also be a very stressful experience, which can lead to a negative garden visit experience.

4.2. Validating and Expanding User Understanding: Results from the Survey

4.2.1. Survey Design, Distribution and Participant Demographics

The survey was designed and adopted after the first co-design workshop with clients. The initial survey included 31 questions, which were then amended and narrowed down, making 23 questions and three subquestions (Figure 9). Questions were reviewed with my thesis supervisors; adjustments were made to the choices and scales in some questions. I also ran test rounds with friends and fellow students to get critical reviews. Choices involving pictures were further diversified, making them more diverse and adding extra selections to

questions 18 and 19. Finally, the questionnaire was translated into Latvian by me, as the primary audience is those women living in Latvia, but in order not to discriminate against non-native Latvian speakers, the survey was left bilingual. The survey was published on my Facebook page and distributed to my contacts using the application WhatsApp on February 3rd; the first 170 respondents were collected in the initial 3 days after the survey was published.

Category_1	Category_2	Questions	Question types	
Demographic Info	Descriptive	Q1. Age group	Categorical	Mandatory
	Descriptive	Q2. Resident area	Categorical	Mandatory
	Garden experience	Q3. Garden access	Yes/No	Mandatory
	Garden experience	Q4. Gardening works (if yes)	Categorical	Not – mandatory
	Stress	Q5. Stress level	5 point Likert	Mandatory
	Exercise	Q6. Physical exercise	Categorical	Mandatory
	Nature	Q7. Nature activity	Yes/No	Mandatory
	Nature	Q8. Time in Nature	Categorical	Mandatory
	Nature	Q9. Barriers for activities in nature	Multiple choice	Mandatory
	Stress	Q10. How to reduce stress	Multiple choice	
Healing Garden	Garden experience	Q11. Previous garden experience	Multiple choice	Mandatory
	Garden experience	Q12. Know research background	Yes/No	Mandatory
	Garden experience	Q13. Garden experience	Yes/No	Mandatory
	Garden experience	Q14. Association with the Healing	Open ended	Not – mandatory
	Garden experience	Q15. Garden-related activities	Multiple choice	Mandatory
	Future garden	Q16. Visiting motivation	Multiple choice	Mandatory
	Garden experience	Q17. Section preference in the	Multiple choice	Mandatory
	Garden design	Q18. Most calming garden	Single choice	Mandatory
	Garden design	Q18A. Commenting choice	Open ended	Not – mandatory
	Garden design	Q19. Comfortable seating option	Single choice	Mandatory
	Garden design	Q19a. Reason for choices	Open ended	Not – mandatory
	Garden design	Q20. Mandatory garden elements	Multiple choice	Mandatory
	Garden design	Q20a. Reason for choices	Open ended	Not – mandatory
	Future garden	Q21. Your benefits from the garden	5-point Likert	Mandatory
	Future garden	Q22. Your intention to visit the	5-point Likert	Mandatory
	Garden experience	Q23. Your expectation from the	Short answers	Not – mandatory
	Comments	Additional comments	Short answers	Not – mandatory

Figure 9: Research Survey Structure. Author E.Millere, 2025.

Quantitative analysis was performed via descriptive statistics, including frequencies, percentages, and cross-tabulations, to identify trends and patterns within the sample. This approach is commonly used in exploratory social research to summarise and describe data meaningfully (Babbie, 2013; Creswell, 2014).

4.2.2. Quantitative Survey Results: Understanding User Needs and Preferences

Of the 242 participants, 95.6% were within the targeted age group, meaning 13 responses were excluded from the survey analysis. Most respondents (45.4%) were in the age group 35-44, 33.6% in the 45-54 age group, and 21% in the 55-64 age group, giving 229 valid responses to analyse. 58.5% of these women lived in the city, 23.1% in the suburbs and 18.3% in the region. 75% had access to a garden to attend to, and 25% did not. In 97.6% of cases (41 out of 43), women living in the rural area had access to the garden compared to only 61.9% in the city and 86.8% in the suburbs. 37.15 of women, who have access to the

garden, state that they spend up to 3 hours a week in it in the gardening season, almost 25% of women spend 4-7 hours a week attending their garden, but 17% 8-12 hours, only about 9.4% women spend 12+ hours in their gardens in the gardening season. Many women chose to respond to this question through the option "OTHER", explaining their gardening habits and reason for not picking either of the responses, such as *"My husband attends to the garden, but I choose what grows in it and enjoy the result"* (n 29).

Stress levels vary by living environment and access to a garden: Women living in the city reported the highest average stress level at 3.07, those in the suburbs reported slightly lower stress (2.85), and women in rural areas had the lowest average stress, at 2.62. When comparing garden access, respondents with access to a garden reported a lower average stress level of 2.89; those without access had a higher average of 3.07. 152 women (66.4% of respondents) rated their stress levels between 3 and 5, indicating moderate to high stress. Question 10 in the survey engaged in finding how women currently reduce their stress level; participants could pick multiple options or add their own. 61.1% or 140 times they picked physical activities such as jogging, walking, yoga, etc. as stress reducers, 137 times socialising with their friends and family was marked, 129 - nature, 105 - creative hobbies, 46 - meditation, but 49 respondents are still looking for their stress reducing activity. 18 respondents added their recipe, where four indicated they use professional help for that, three referred to some body-related activities - such as cold swimming or sauna, 3 reminded that they do not have stress.

Another aspect I was seeking to find out was the activity level of the women in the target group, which I should consider when planning the garden layout. 194 women, or 84.7% of respondents, reported engaging in less than 1 hour up to 7 hours of physical activity per week, meaning it is one hour or a lot less daily. Only 2.6% of women engage in physical activity 12 hours or more a week. Interestingly, the most active age group is 55–64 (12.5% for 8–11 hrs + 2.1% for 12+ hrs), and the least active group: Women aged 35–44 had the highest percentage with less than 1 hour/week (20.2%).

93% of the respondents spend time in nature, 10 respondents spend more than 12 hours a week, 23 respondents 8-11 hours, 73 respondents 4-7 hours and 104 respondents 0-3 hours a week in a forest, park, beach or similar setting. While the time they spend in nature is very little, it is positive to read that most do go out to spend time in nature. Question 9 explains

why these women do not spend more time in nature. This question was set in the hope of finding some problems to be solved with the healing garden, as spending time in nature is one of the key wellness and healing enhancements. 67.2% mentioned that “lack of time” is one of the reasons they don't spend more time in nature, whereas nearly 35% attributed it to the bad weather. (Note: The questionnaire was filled out in February, with an average T between 5 °C and 1 °C, and 70% of the time, it was cloudy (WeatherSpark, n.d.)). Women also mentioned factors such as small children, mental health, health issues, poor time management and their laziness. Twenty respondents spoke about limited access to nature nearby, while 19 also commented on the accessibility issue to nature, which was not further explained. Five respondents stated they were not feeling safe.

My next section of the questions directly relates to the respondents' experiences, expectations and knowledge about the healing gardens. In question 12, when asked if they had ever heard of the term ‘healing’ or ‘therapeutic garden’ before this study, 73% indicated that they had not; only 27% (61) of respondents had some information about such a concept/term. These women also indicated in question 13 that they do not know if they have ever visited such a garden. When asked about their recent visit to a designed green space (question 11), they were asked to pick up to 3 areas they had visited in such a space. Majority marked water structures (131 responses), area near blooming flowers (126 responses) and forest like area (99 responses), seating area for relaxing (83 responses), picnic area and quiet zone for own reflection (both 43), only 20 respondents picked gardening activity zone as one of their top 3 most visited spaces. 2 respondents wrote that they stay mostly near by children's play ground.

When asked what associated came to their mind (and this was not a mandatory question), 214 participants from 229 responded, and a word cloud (Figure 10) was created from the responses. The word “peace” was mentioned 80 times, and the word “34” 34 times. Words such as “and, the, of, a, with” were excluded from the word cloud.

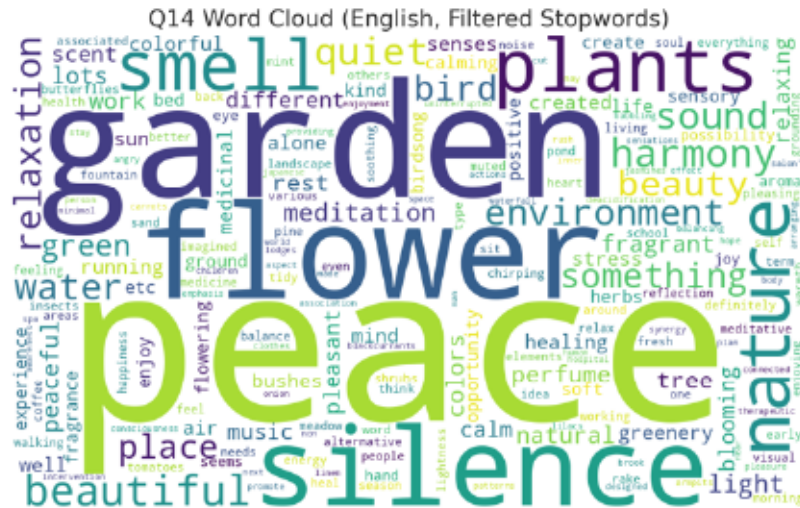


Figure 10: Word cloud, question 14 answers. Author E.Millere, 2025.

Given the word cloud initial data and further analyse the open-ended responses to Question 14 – which asked participants to share associations evoked by the term “*dziedinošais dārzs*” (healing garden)—this study employed a thematic analysis approach following the framework proposed by Braun & Clarke (2006), who argue that “thematic analysis should be seen as a foundational method for qualitative analysis” (p. 4). This method enabled the systematic identification of recurring patterns and meanings within qualitative data and was chosen due to its flexibility and suitability for both psychological and experiential inquiry. Braun and Clarke (2006) distinguish six phases in this method: familiarising yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

To ensure depth and reflexivity, the analysis was informed by Charmaz's Constructivist Grounded Theory (2006), which emphasises that meaning is co-constructed between participants and the researcher. In this way, the themes were not treated as objective facts, but as interpretive groupings shaped by the research context and the language used by participants, mainly based on the word cloud above.

In line with guidance from Flick (2014) in *The SAGE Handbook of Qualitative Data Analysis*, the analysis was both inductive (emerging from the data) and deductive (guided by sensitising concepts related to nature, healing, and well-being). Flick notes that thematic analysis is particularly effective for organising and interpreting experiential accounts across disciplines, and encourages a transparent analytical process—an ideal fit for this dataset.

Eight thematic categories were developed to capture the breadth of associations shared by respondents:

1. Peace – looking for alternative associations under this word;
2. Smell - collecting input on the importance of scent sensory through fragrance and natural smells.
3. Environment - capturing descriptions of the place, landscape, the atmosphere, and environmental quality.
4. Feelings - what feelings are associated with the term “healing garden”, emotional and bodily responses, such as feelings of safety, relaxation, or freedom.
5. Plants – Specific references to plants, flowers, and vegetation.
6. Activities - references to activities taking place in the garden.
7. Elements – References to physical design components like water, stone, wood, and pathways. Also included references to light and sun in this category.
8. Sound – Descriptions of soundscapes, including bird songs, flowing water, or silence.
9. Miscellaneous - comments that were hard to put in either of the above categories.

Each response was coded according to one or more of these themes, and frequencies were recorded to show prominence. This combination of semantic coding and interpretive categorisation allowed the study to explore what participants said and how they conceptualise healing spaces emotionally, sensorially, and spatially.

Under the thematic category **sound**, 52 entries were marked, mainly linked with quietness using the word “quite”; 12 respondents indicated “bird songs” and 4 - quite, relaxing music. It means and shows how different women approach the audio sensory. Many of those who market “quite” also market natural and calm, not realising that the garden is never really quite. Such a realisation makes me argue that the idea behind the word “quite” is more closely linked to the human-made sound pollution one experiences in the city.

To verify the word cloud and explore whether there are additional ways people refer to **peace**, I analysed the responses in the Peace section, categorising them to that topic, which yielded 84 responses out of 217 that mention peace as a key association when thinking about healing gardens. Similar words, such as “being at peace” and “calming,” were used to indicate that this place should bring a sense of peace to oneself to facilitate healing.

Forty references to **scent** were made, mainly stating that, on one occasion there was an indication of a particular smell - lavender, in 3 cases - to fresh air. Interestingly, the women referring to fresh air lived in rural and, in one case, suburban settings, showing that they know the value of fresh air. Assumingly, because most responses also mentioned plants, peace, the reference to smell was relatively positive, not the smell of compost, but this is my biased assumption, as it was not further tested. On one occasion, a reference to “garden smell” was made, letting me assume that the responder is familiar with the various stages and scents of the garden.

In 49 situations, a reference to the **environment** was made, how it should be - beautiful (19), calming/harmonious, taken care of (4), secure. In 55 case,s references are made to the **feelings** such a garden should create, and it is very linked to the environment, who it should make one feel, hence these two sections can almost be blended, but for the time being, they have been left as separate. People mainly used descriptive words like *‘harmonious’*, *‘relaxing’*, *‘rest’*.

For the design research, it has been essential for me to find out what particular types of plants people associate with a healing garden in seaside Latvia. 73 references were made to plants, on 15 occasions to blooming plants, 10 to healing plants, 10 to colourful, lush plants, 10 to green plants. Given that green is known for its restorative qualities, no wonder so many people made reference to the colour. There are numerous mentions of trees, bushes, and shrubs, with her comments referring to “green, flowers, perfume, spice beds, and hedges.”

Activities were mentioned in some 35 responses, ranging from ‘raking sand like in the Japanese gardens’ to ‘working with hands and soil’, to ‘meditating’ and ‘watching nature’. This indicates that while most of the respondents have their own garden and spend some time maintaining it, very few associate this garden as a place of active participation, rather taking the viewers and enjoyers standpoint in an already made garden.

Elements were another critical section for the garden design. In 32 occasions, reference to some garden elements - water, light, sound creating element, decor, etc.- were made, mainly the references were about water - in 11 cases, and light - in 5 cases. *“Muted music and light, colours, scents, birds, orangery”* a response by 45-54 year old from a city without a garden.

In the Miscellaneous section, I put comments like “Peace. Organized thoughts. Humility. Simplicity. Anxiety reduction.” and “a place for meditation, silence, no tourist crowds” to

dedicate the thoughts that don't repeat and don't create a trend in this analysis yet but create meaningful input into how women think about the healing garden.

This analysis was done in Excel format manually, narrowing down and combing the sections, coding the similar responses, and dividing up the words in the comments. It was also done in Latvian, as I was working with the initial data set, yet translated by me on the go to report in this thesis section.

	A	B	C	D	E	F	G	H	I	J	K
35	Table1										
36	14. Kādas asociācijas Jums veidojas, kad dzirdat terminu "dziedinošais dārzs"? Nosauciet dažas! // What associations come to your mind when you hear the term "healing garden"? Name a few!	MIERS	SMARŽ	VIDE	SAJŪTA	AUGI	AKTIVITĀTĪ	ELEMENTI	SKAŅA	Dažādi	
37	mapas	MIERS		SATIKTI SEVI, VI				KĻOSUMS			
38	harmonija, miers, gaismā	MIERS						GAISMA			
39	Meditācija, atpūta, darbs stresa mazināšanai			STRESA M. ATPŪTA							
40	Miers, atgriešanās pie sevis, autentiskums, pilsētas, mājas	MIERS					ATGRIEŠANĀS I		PĻŪSMA, MAŅF		
41	Dārzs blakus slimnīcai, alternatīva vieta bērniem pie skolas kur nomierināties										x
42	Dārzs iespējams dizainēts ar uzvaru sniegt sensoras pieredzes, kas saņem.			SAZĒMĒ			SENSORĀS PIET				
43	Dārzs ar ārstnieciskiem augiem				ĀRSTNIECĪBAS						
44	Meditatīva mūzika un strūklakas, ūdenskritumi						STRŪKLAKAS, Ū. MEDITATĪVA MI				
45	Terapija. Daba. Labturība						TERAPIJA				

Figure 11: Example of data set analysis. Author E.Millere, 2025.

Question 18 provided insight into a visualisation of a calming garden, asking respondents to pick one of four pictures of gardens provided. The majority (73.8%) of people chose picture “D” (other results can be seen in Figure 12), allowing me to assume that the sense of ‘calm’ is more associated with nature-like gardens than with more organised, structured, and urban gardens.



Figure 12: Results of question 18. Author E.Millere, 2025.

This assumption is confirmed in Question 18a, where respondents were asked to comment on the choice they made in Question 18. This question was not mandatory, but among the 169 respondents who chose option “D”, 155 provided comments about their choice. The majority (99 responses) commented on the vegetation being natural, wild, unstructured, using phrases like “(..)the garden is sunny, calming garden in the countryside” (n 131), “Picturesque, intimate, mysterious” (n 173). And another interesting topic was that this picture awakened memories and feelings, such as “It reminds me of my dear Omite's little garden and the garden of my parents' summer house. Made with love, cared for, a lot of sincerity and love put into it” (n 139).

Additionally, many respondents (25/155) made remarks about how this garden felt most removed from the city, from people, and from the manufactured world. This feeling of being 'removed' directly illuminates their word choices in response to Question 14, where 'peace,' 'calm,' and 'relaxing' were dominant associations with the concept of a healing garden. Notably, their responses to Question 18a, after engaging with visual representations of potential healing gardens, mirrored these initial associations. This consistency suggests that the visuals served as a powerful tool, enabling respondents to more readily articulate and

reinforce their intrinsic feelings and expectations regarding the atmosphere and emotional qualities of a healing garden environment.

This analysis was done in Excel format manually, marking each response in accordance with preset group labels and coding the similar responses. This time, the responses were translated firsthand with Google Translate and then analysed in English.

In Question 19, respondents were asked to choose one seating option that seemed more relaxing for them. The majority (33%) chose option F, which offers rustic armchairs in green settings. There was a similar response rate (31%) for hammocks hung between the trees. It is interesting that only 2% of respondents chose a simple wooden bench, which we often see in parks and public spaces (Figure 13).



Figure 13: Results of question 19. Author E.Millere, 2025.

Question 19a gave an insight on these results. The four respondents, who picked option ‘A’, comment that it feels *habitual* (n 104) and simple, doesn't make them feel out of place or uncomfortable (n 3). In contrary, those choosing response ‘F’ made references about the convenience and experience with such chairs, that they provide comfort, also the environment dictated the answers, in 13 cases reference to greenery, view, feeling of “Away from the hustle and bustle, a wide horizon” (n 40). Responses also colaret with the ATR

(Kaplan, 1989, 1995), as respondents are commenting on the value of (mental) safety in the garden: *"Subjectively. I need isolation from everyone to relax. Tall plants create a wall that helps to 'isolate', if only psychologically"* (n 39); *"Detachment can be felt - expresses the desire to be undisturbed"* (n 128); *"A safe environment where nothing can surprise you from behind"* (n 170).

Between responders, who picked option 'C', again, the majority (23) of comments were linked to being able to observe the nature, being solo. *"What could be nicer than lying in a hammock and watching the tree branches swing overhead?"* (n 134) Eleven references were made to the sense of swinging, rocking: *"Because rocking involves a rhythmic movement that is repetitive and soothing."* (n 202) and *"The relaxing feeling would be given by lightness, the possibility to look into the universe while swinging"* (n 162). Awakening of balance and proprioception are senses that Rukšāne (2022, 2023) and other scientists refer to, saying that healing gardens should not only focus on awakening the five senses, but go beyond these to focus on a greater variety of senses.

Question 20 was linked to the garden elements, helping me better understand which elements to incorporate into the healing garden layout plan for the garden in Engure: most picked water, fire and a pergola-style pathway (see Figure 14). In Question 20a, respondents were asked to comment on their choice in Question 20. Because respondents were asked to choose three elements, it is nearly impossible to figure out which of the three options they are commenting on, so I did an overall thematic analysis, linked to the choice of elements. Water in the form of 'sea', 'stream', 'bath', 'waves', 'pond', 'fountain' was mentioned more than 100 times. The overall association was linked with calmness and soothing: *'Fire and water flows are always moving, relaxing to watch and listen to'* (n 8) and *'The sounds - wind chimes and the sound of water - attract me and make me happy. Various trails and walking elements entertain and excite'* (n 143).

20. Kurus 3 dārza elementus Jūs izbaudītu/vēlētos piedzīvot sava dziedinošā dārza apmeklējuma laikā?// Which 3 elements would you most likely enjoy during your healing garden experience? Please mark 3 choices.



Figure 14: Results of question 20. Author E.Millere, 2025.

After having introduced the respondents with the concept and idea of 'healing garden', I asked in Question 21, whether they see a benefit of such garden for themselves - 108 out of 229 responded with 5 (strongly agree) and 85 with agree, allowing me to conclude that 84% of respondents see benefits for themselves from such garden. The final question was more market research, whether they would be willing to visit such a garden in Engure, Latvia, and 40% were most likely to visit the garden.

In question 22, women were asked what they would wish to experience in such a garden. In essence, the overwhelming desire for a healing garden experience centres on finding peace and tranquillity, with participants longing for *"Disconnecting from work, everyday stress, in the scents of nature, in peace"* (n 116), *"Peace, well-being, emotions"* (n 213). A deep connection with nature is also paramount, expressed through the appreciation of sensory details like *"smell all kinds of natural elements and plants"* (n 26) and the beauty of *"Beautiful combinations of flowers, trees, bushes..."* (n 146). Beyond immediate calm, visitors hope for personal well-being and restoration, envisioning the garden as a space for *"Relaxation, oblivion of everyday life"* and a way to be *"Stress reducing and rejuvenating."* While solitude is valued, *"I wouldn't mind being alone"*, some also seek gentle social connection (*"Slow, leisurely conversations"* n 122), alongside opportunities for *"Get to know*

the concept of the healing garden" (n 160) and experience *"Surprise and peace at the same time"* (n 22).

4.3. Synthesis of User Insights: Core Requirements for the Healing Garden Design

The core needs and expectations of the user - Latvian women aged 35-64, include the wish to escape from their daily duties and stresses, reconnect with nature. This resonates with a need for tranquillity and a break from urban environments. Participants emphasised the importance of various sensory elements, including pleasant smells (flowers, fresh air, lavender), visual beauty (natural, wild vegetation, blooming flowers, green spaces), and calming sounds (quietness, bird songs, gentle water features). Yet, there are indications that there might be stressed from the stillness and quiet, as it is this user's unnatural state. While quietness is desired, the initial unfamiliarity with profound silence could be a stressor for some city dwellers, suggesting a need for a gradual introduction to tranquillity and perhaps subtle natural soundscapes. Also, this can be addressed through carefully designed workshops and masterclasses, which incorporate being in the garden and stillness as part of the activity and self-discovery.

The garden features and experiences users wish to have at the healing garden, include clear wayfinding and clearly defined areas, so that they are not afraid to cross some unknown rules or someone's else privacy (the importance of own privacy and respect toward's others privacy is a recognised cultural norm in the Northern countries). Given that an average user lives in the city, away from the sea, the element of sea nearby is seen as an added value and should be included in the garden visit's experience. "Little pockets to hide" and designated "places for solitude" are essential for personal reflection and a sense of mental safety and undisturbed relaxation. Tall plants can contribute to this feeling of psychological isolation.

Findings indicate that participants are likelier to engage with the garden through structured activities like concerts, masterclasses using natural materials, and DIY craft corners. This addresses the initial unfamiliarity with healing gardens and provides a clear purpose for visiting. This shall be taken into consideration once developing the business plan for the garden as a service.

Many answers in the survey and also in the co-designing workshop indicated the preference for "natural, wild, unstructured" garden aesthetic over organised, structured garden. This suggests that users need the healing environment to evoke a sense of the countryside,

intimacy, and even a touch of mystery. This aesthetic also triggers positive memories and feelings of authenticity. Nonetheless, from a garden design aspect, this is a hardest to achieve looks in the garden landscape. Gardens in essence are designed, maintained and planned environments, and 'organised chaos' is hard to control and achieve the expected outcome.

Other garden elements should include comfortable seating, which also follows the principle of offering solitude and socialising options. Water and fire features are preferred, as these people associate with a sense of calmness and soothing, healing feelings. Generally, elements and plans should evoke more than the usual five senses, like gentle swinging in hammocks.

Potential barriers to take into consideration, which can keep someone away from thoroughly enjoying the healing garden, include - lack of time, which showed as a significant barrier to spending more time in nature. The garden as a service should offer efficient and engaging experiences that make the most of limited free time. Weather is another contraindication, especially in Latvia, where summer and green period are so short. Considerations should be put towards sheltered, shadow areas, mosquito nets in private spaces, and potentially an indoor space for activities in case of bad weather. Also, an alternative set of activities needs to be designed for the winter to expand the garden as a service across the year.

The initial discomfort with quiet and meeting oneself is particular to this user group, which came up in various interactions with users (and also expert sessions). Quiet areas should be introduced gradually, and subtle natural sounds should be considered to ease the transition for city dwellers. This also came up in multiple answers in the survey. Finally, the low awareness of the healing garden as a concept in the particular age group creates the need to emphasise the "activity attached" aspect to attract visitors to the garden and the idea. A holistic and evidence-based service design approach to healing garden branding can be the solution for explaining and letting someone understand the concept faster and better.

4.4. Expert Perspectives: Insights from the Co-Design Sessions

4.4.1. Expert Recruitment, Background and Methodology Used

There have been six co-designing sessions with six experts - Liesma Ose, a social work professor from Stradiņi University in Latvia, Ilze Rukšāne - a landscape architect, author of Riga Psychiatry and Narcology Center's garden, Aivars Lukevics - seasoned gardener, author of master thesis on "Possibilities for creating a therapy garden: an example of the outpatient

care centre “Veldre” of the Riga Psychiatry and Narcology Center” (2019), Ligita Šifere - designer, gardener and owner of the seaside garden “Magnoliju dārzs” in Engure, Annija Sprīvule - supervisor working with LGBT+ community and women's issues, Liene Jurgelāne - anthropologist, artist, facilitator, researcher, exploring plant-human relationships and ally ships for change through embodied practices. All participants were approached individually, asking to dedicate an hour for a co-design session. Some sessions were held online, some in person, all had in common that I shared the concept idea, healing garden characteristics and information about the target audience for whom the garden is being designed, and showed the empty location layout plan, which was intended to be a blank canva for the co-design workshop, but ended being a conversational prompt. Each session was different, based on the interest and expertise of each participant. Hence, the data set is very diverse and unique, making it hard to analyse it per se, instead applying the bits that correlate with the user and literature insight. Data was analysed based on the visual outcome from the sessions, during session, I or the expert made drawings, notes on the layout, some thoughts, ideas, and quotes were jotted down in the layout, which were then incorporated in the final design.

4.4.2. Key Expert Insights for Healing Garden Design

Session with Aivars Lukevics was an informative session about public gardens in Latvia and internationally, he shared various links and pictures after the session, suggesting multiple elements and ideas that can be borrowed from each of the gardens. For example ,the introduction to Derek Jarman's garden in the UK's driest part, Dungeness, is special with the ability to create a garden in the sand, surrounded by rocks and pebbles. It is now an iconic garden open to pthe ublic. He also invited to look at garden from a gardener's perspective, arguing, that gardener created garden for the following purpose “ garden as a harvest; garden as a therapy (for its owner); garden as a landscape/background picture; garden as a pathway, and environment where to be/move; garden as a conversation; garden as prestige for the the owner”. He also suggested that “Garden is not a plan, it is a function”, meaning one should think who the garden will serve, why the garden is being created.

In the co-designing session with Ilze Rukšāne, landscape architect, we discussed a concept of “*a place where to die beautifully*” in the context of a healing garden and social service interaction. We discussed her own designed concept of “3E + E” in garden design, meaning the importance of following ecology, which will make economy in garden design, and create

aesthetics (‘estētika’ in Latvian) + designer’s ego, which is always present in each garden. She was the one who prompted me to look into more than five senses and ways to address them. We spoke a lot about the importance of ecology in the Engure garden, how to leave the moss untouched in the grass, reuse the old leaves from the large trees, collect the rainwater for garden watering, etc. All these ideas have been incorporated in this study and the final layout. From this session, the key takeaway is that “Landscape teaches us patience in the long run, through watching how trees and plants grow”.

The session with Ligita Šifere was the most practical one, as we met in my garden location, walked through the area, and did a lot of co-designing in the blank property layout form. A lot of the design suggestions have been incorporated in the final garden layout (Figure 15), for example, the location of compost, new pine trees in the middle of the yard to cover the neighbour’s terrace, maintenance shed is located in a way to cover other neighbour’s decades unfinished house, etc.

The session with Liesma Ose was very informative about the state of social work and women in Latvia in the context of social work. The profiles of social work clientele, the available support and the desperate need for preventive interventions, so that the women do not reach the social or medical help.

Session with Annija Sprīvule was very informative, as we spoke a lot about her personal experience and connectivity with nature, as woman in her 30s living in the city. She reflected on her rituals she has created to connect with nature more, like watching the sun set every day at a particular spot, designing her day around the time of sunset. About how she has started to create a relationship with this place, noticing more and more every day, even though it was there already yesterday and the day before. She noted that the generation born in the late 80s, early 90s was the first generation that had the choice of not participating in the garden work. From her work as a supervisor, she cites Carl Jung: “All answers are within ourselves, sometimes we need a push from the outside,” and nature can be that push. In the context of the healing garden, she shared her experience leading and participating in various workshops with young people, which were all designed around being away from technologies and immersing in the nature, unstructured and with no aim. To just be in nature. She noted that it created anxiety for a lot of people, which is something I take away from this

session and note down as an essential factor for creating positive rather than negative experiences with nature.

The session with Liene Jurgelane was online; she spoke about her latest project, “Informal herbalist school” in her community at Institute ‘X’ in Aarhus, Denmark. She invites people with little or no experience with gardening to learn about easy-to-grow plants, edible plants that can be found even on the roadside and parks within the city. She encourages them to try and experience the feeling of connecting with nature. She also mentioned that in their community, there is a sign saying ‘All the plants you meet at Institute ‘X’ are edible’, which gives the visitors a sense of safety and reassurance for their natural temptation to touch, feel, smell, taste a plant. We discussed her experience leading workshops in nature and how to incorporate the urban sounds and aesthetics in the experience. She argued that no sound is unnatural, nature is part of the urban landscape, so the urban landscape is already part of our lives. She stressed the importance of giving people the space to reflect on their feelings about their experience in a given setting. Asking one to name the sensations he/she experience, feel them, and reflect about them, is an equally important part of the healing process, as the ‘feeling’ experience alone.

4.5. Summary of findings

4.5.1. The findings align with the literature review

The research findings strongly resonate with established literature on healing gardens and attention restoration. The lower stress levels reported by women with garden access and those in rural settings directly support Ulrich's (1984) findings on the restorative impact of natural views and environments. The pronounced preference for "natural, wild" garden aesthetics and elements like water and fire aligns with Kaplan's (1989, 1995) Attention Restoration Theory, specifically the concept of "soft fascination," where effortlessly engaging natural stimuli allows directed attention to recover. The emphasis on multi-sensory experiences, extending beyond the traditional five senses, echoes contemporary perspectives in healing garden design (Rukšāne, 2022, 2023) that advocate for richer and more holistic sensory engagement. Furthermore, the identification of a deep-seated, albeit sometimes latent, positive connection to nature among Latvian women, stemming from historical and cultural contexts (Ozoliņš, Ančevska), underscores the potential for healing gardens to tap into deeply ingrained cultural values and preferences, enhancing their compatibility and

restorative potential, a key aspect of ART. The user-centered approach and the identified need for structured activities within the garden framework also align with service design principles (Stickdorn & Schneider, 2011), highlighting the importance of designing services that meet specific user needs and are delivered clearly and engagingly, particularly when introducing a novel concept like a healing garden.

4.5.2. Findings from Co-design Workshops and Survey

Findings indicate that the envisioned healing garden for Latvian women aged 35-64 should prioritise natural and somewhat unstructured aesthetic. This preference is evident in survey responses, for example, "(...)the garden is sunny, calming garden in the countryside" (n 131), and another describing their ideal as "*Picturesque, intimate, mysterious*" (n 173). The need for dedicated quiet areas alongside opportunities for social connection is also apparent, reflecting the desire for "*little pockets to hide*" (workshop note) for solitude, while also acknowledging that "social health – wellbeing that comes from connection – is as essential as food and water" (Hobson, 2024). Sensory engagement, encompassing not just sight, sound, smell, taste, and touch but also senses like balance (as suggested by the popularity of hammocks, with one respondent noting, "*The relaxing feeling would be given by lightness, the possibility to look into the universe while swinging*" n 162), is crucial, with a particular emphasis on water features and comfortable, nature-integrated seating. Given that the target users are primarily city dwellers, a gradual introduction to the garden's tranquillity is essential, as one workshop participant noted the potential challenge of "*silence... it might come as a stressor at the beginning, as it is unknown and uncomfortable.*" Including structured activities is also key to facilitating engagement, especially given the low initial awareness of healing gardens, as only "27% of respondents had some information about such a term." Practical considerations include time constraints, a significant barrier to nature engagement ("67.2% mentioned that 'lack of time' is one of the reasons they don't spend more time in nature"), and weather variability in Latvia necessitate efficient programming and sheltered areas. Expert input underscores the importance of ecological design ("Landscape teaches us patience in long run, through watching how trees and plants grow" - Ilze Rukšāne) and encouraging users to mindfully reflect on their sensory experiences, with one expert suggesting asking one to "name the sensations he/she experience, feel them, reflect about them" (Liene Jurgelāne).

5. DESIGN WORKS

This chapter of the thesis responds to the 4th goal of this thesis “ To synthesise the research findings into practical design guidelines, informed by service design principles, for creating healing garden layouts that are culturally and ecologically relevant to Latvia and meet the identified needs of midlife women, exemplified through a conceptual garden plan for Engure.” and demonstrates this plan and guidelines. In the following sections, I will introduce you to the research and service design-supported conceptual garden plan for the healing garden in Engure. This practical experience will be used to create general guidelines for designing a healing garden using service design principles, which I will present in the 2nd subsection of this chapter.

5.1. Conceptual healing garden plan for Engure, Latvia

The layout sketch (see Figure 15) of the healing garden in Engure, Latvia, represents the outcome of the literature review, user-led research and consultations with experts. The given facts for the particular location were the 130-year-old yard with two buildings, five large trees, an area of shrubs and the locations of neighbours on three sides, the street and the sea on the 4th. And the owner’s request to divide the area into a public and private zone, the main house is inhabited throughout the year.



Figure 15: Healing garden in Engure, Latvia layout plan. Author, E.Millere, 2025

This garden is designed as a passive, restorative garden that allows individuals to come to terms with their feelings while being in a space and follows the healing garden characteristics discussed in the Theoretical background chapter - assuring that the garden is accessible (both easy to find and also available for people with various physical conditions), has a place for solitude and socialising, giving users the options for choice, awakens various senses through different elements in the garden, encourages curiosity and exploration. The design process has followed the service design principles and methodology, where possible, in the initial stage of discovery and definition of the Double diamond (Design Council, 2005).

As a result of co-design workshop with users, where **accessibility** was widely discussed, the garden layout includes clear pathways. The garden concept includes well-informed signs from the roadside side and the before-service stage involves clear information on what to expect, what can and can not be expected at the garden. Low fencing and shrubs are used to divide public and private areas, creating a clear borderline for people, as shown in Figure 15.

Sensory experience is provided via various garden elements - such as hammock, wind chimes, fire pit, stone garden, different coverages for the pathways (wooden terrace, paved stone pathways, brick paths around the flower beds, natural paths through the green area), large variety of shrubs, plants and trees to attract variety of animals to the garden.

The garden as a room concept plays out in various seating areas, allowing people to experience different views and sensations. The area by the wood log shed makes one feel outside the garden, yet provides privacy and solitude, especially during events. A vegetable garden with the ability to water it and weed the few vegetable beds awakens childhood memories through its connection to the soil and its smell. The area, which is surrounded by a flower bed, offers more of a sensation of being in the field, allowing people to lie down in the grass and experience the calm sky watching, or fall asleep in the hammocks between plum trees.

The garden's restorative qualities are provided by its distance from busy cities and traffic. It takes one h 20 min to get here from the capital city, Riga, so the drive on its own already takes the person away from their daily routine. For the local community, the secluded area in

someone's backyard takes them away from all things familiar, opening up an unknown, new space, which I hope will be used often.

Connection with nature is a holistic approach through service, being in nature, getting to know nature, including yourself as part of nature, and connecting to nature through natural material workshops, sounds, and smells.

The garden has various zones: a vegetable garden, a maintenance zone, a socialising terrace, a children's play zone, a larger activity zone (joga sessions, concerts, etc.), intimate garden 'pockets', and various seating options throughout the property.

5.2. Guidelines for Designing a Healing Garden using SD principles

Drawing from my practical example of designing a healing garden for women aged 35-64 in Engure, Latvia—a design work that incorporates healing garden characteristics in its layout and concept, and follows service design principles - I propose guidelines for service and garden designers interested in creating healing and restorative gardens. I have designed the guidelines so that they include the healing garden characteristics that should be presented in every healing garden to classify it as a healing garden and service design principles, which should define the design process.

In addition to the guidelines, it is valuable to keep in mind the following things:

- Familiarise yourself with **healing garden characteristics**, including them in your initial garden concept; this will be a great conversation starter with various stakeholders, and inform people about what you want to create. Remember that the healing garden principles can vary a bit based on the user group you are working with. Still, general principles should include accessibility (including clear information about the garden), various sense awaking design, have the feeling of taken people away from their stressors, assure sense of safety through confining the area, and the freedom of choice to be alone or social, based on individuals mental capacity at the visits time.
- Work with landscape architects to shape the final plan, to learn the best tips and tricks about the practical aspects of **creating a garden in a particular location**. Each location comes with its own challenges, including the ratio of hours of sun to shade,

seasonal lengths, soil characteristics, and water availability for the garden, among others. Alternatively, this information can be gathered from the local community, working with neighbours and other garden owners, who have worked in the particular environment. Use nature as an informant - observe it, including nearby gardens, to understand what grows best.

- Analysing the garden owner's availability and plan for **garden maintenance**. A significant amount of maintenance can be reduced in advance with effective garden planning and layout. For example, choosing native, local plants, that thrive well in the particular soil (versus picking plants that need the soil to be 'built'), placing agro textile before laying out pathways and flower beds, to prevent weeds, using mulch and special capsules for keeping moisture longer in the soil, reducing the water waste, etc. Plan for soil, compost deliveries, a shed, and where to store tools, branches, etc.

Healing garden design characteristics						
		Sense of Enclosure and Safety	Opportunities for Movement and Exploration	Spaces for Solitude and Connection	Multi-Sensory Richness	Opportunities for Interaction and Purposeful Engagement //Structured and Facilitated Experiences
Service design principles	User-Centred Design	Using qualitative methods, investigate user perceptions of "being away" and "safe." Then, design based on their feelings.	Understand the users' mental capacity per Graham's model and their physical abilities to experience the garden. Watch how users like to move and explore. Give them paths and things to see that match this.	Ask users what quiet and social spots they need—design based on their answers.	Find out which smells, sights, sounds, etc., feel more calming for the users and incorporate those into your garden design.	Inquire with users about what they'd like to <i>do</i> or are already doing in a similar setting (gardening, crafts, learning). Design workshops and events based on what users are interested in and need for their well-being. Create spaces and tools for this.
	Co-creation	Facilitate co-creation sessions to design spaces that feel safe and private.	Let users help design, co-create and build paths and interesting things to discover in the garden. Involve the community in populating the garden with local elements.	Let users help design individual nooks and social areas (layout, features).	Let users help pick plants and things that create good sensory experiences.	Let users and community members help plan and lead some of these activities.

	Sequential	Structure the garden experience to guide users through progressing restorative states (e.g., stimulation to relaxation). Think about how users feel as they enter and walk around.	Offer different ways to move and explore as users spend more time in the garden.	Think about how users are informed about the options of choice upon arrival, and how they move between them based on their mental state. Make it easy.	Plan how the garden's smells, sights, and sounds change as you walk through. Make sure they complement each other.	Offer users choices and different engagement levels of activities. Plan a calendar of events that offers a variety of experiences over time.
	Evidencing	Create visible cues that promote relaxation, restoration (e.g., quiet zone signage, comfortable seating arrangements) and privacy.	Design clear signage and wayfinding within the "garden rooms" to enhance understanding and reduce anxiety.	Clearly show which spots are for quiet and socialising (signs, design).	Mark the unique smells, sights, and feels in the garden.	Make it clear what activities are available and how to join in.
	Holistic Design	Design for a holistic sense of wellbeing, considering the interplay between different restorative elements and user needs. Try to create a place that does not remind people of their daily stressors.	When designing the interconnectedness of different garden areas and elements, consider users' emotional, social, and cultural contexts.	Make sure the quiet places are quiet and private, and the social spots are inviting and allow people to connect.	Make sure all the sensory parts of the garden complement each other.	Connect the activities to the overall well-being and nature connection—for example, yoga classes, meditative music concerts, ceramics. Plan a set time for activities in the garden and when they are available for passive enjoyment.

Figure 16: Guidelines for healing garden design using service design principles. Author, E. Millere, 2025

6. DISCUSSION AND IMPLICATIONS

6.1. Discussion

This research aimed to develop a comprehensive, service design-informed garden layout plan for a healing garden tailored to the needs of Latvian women aged 35–64. The findings from the exploratory case studies, the targeted survey, and the co-design workshops with both the user group and experts directly contribute to answering the research questions posed at the outset, providing a rich basis for discussion. The study's findings largely align with existing knowledge in therapeutic landscape design. For instance, the survey data indicating lower stress levels among individuals with access to nature strongly supports the principles of Stress Reduction Theory, while the expressed user preference for natural, engaging garden environments corroborates Attention Restoration Theory's emphasis on soft fascination as a means of restoring directed attention. Furthermore, the user-centered and co-creative methodologies employed throughout the design process underscore the practical value and applicability of service design principles in this context. However, the research also identified nuances that extend beyond current understanding. The potential initial discomfort with profound silence reported by urban-dwelling participants suggests a need for context-specific adaptations in the design of restorative spaces, particularly in cultures or demographics with limited prior exposure to such environments. Similarly, the strong inclination towards structured activities as a gateway to engaging with a healing garden for this demographic highlights a potentially crucial element in introducing and facilitating the use of such spaces, especially when awareness of the concept is low. The new knowledge contributed by this research is significant. It provides a concrete demonstration of how service design principles can be systematically integrated into the healing garden design process, offering a novel methodological framework. Moreover, it yields specific insights into the needs and preferences of Latvian women in midlife concerning healing gardens, a demographic and cultural context that has received limited attention in existing literature. The implicit development of a user-centered design process model for healing gardens in Latvia, emphasizing iterative user engagement and consideration of local context, represents a potentially valuable contribution for future research and practice in this field. While acknowledging limitations such as the nascent body of directly relevant interdisciplinary research and potential biases in survey participation, this study ultimately underscores the significant potential of a user-centered, service design approach to create therapeutic

landscapes that are both culturally relevant and effectively address the specific well-being needs of their intended users.

The limitations of this study include the fact that there has been limited research in the field of healing, health, wellness garden design, and the impact of the design on individuals, particularly in the design process. Therefore, the theoretical background does not directly support this study; instead, various arguments are presented to validate the points for healing garden layout design. The trustworthiness of the collected data is valid, given that all best research practices were employed; however, the survey data may be limited, as only women with access to digital tools and digital literacy could participate in the study.

6.2. Practical implications

This study reveals the lack of knowledge about Latvia's healing garden concept and service, highlighting a market opportunity for such services, primarily in the social service sector. The connection between healing garden design principles and service design principles that guide the process is a novelty, which has been tested in a practical example in this thesis and resulted in guidelines for anyone co-designing a healing garden in Latvia.

The example and concept can be used as an environment to train horticultural specialists and landscape architects to develop active therapeutic gardens in Latvia in the future.

Overall, the thesis contributes to the application of service design to a new area—healing garden design. This can significantly benefit service designers, architects, landscape architects, gardeners, or anyone else setting out to design an effective, targeted, user-centred healing garden.

7. CONCLUSION

7.1. Summary of Key Findings

This research offers key theoretical and practical contributions to therapeutic landscape design by developing a service design-informed healing garden plan for Latvian women aged 35–64. Theoretically, the study demonstrates a robust, user-centric methodology that systematically integrates service design principles with established healing garden knowledge and specific user needs. Notably, it reveals how co-creative practices, focusing on the user journey and holistic well-being, effectively translate theories like Attention Restoration Theory into tangible, culturally relevant design elements. Furthermore, the research provides a nuanced understanding of the target group, emphasising their desire for nature-based stress reduction alongside specific preferences such as a gradual acclimatisation to silence and a strong inclination towards structured activities, thereby enriching existing theoretical frameworks with contextual insights specific to Latvian women in midlife.

Practically, this work delivers a concrete, service design-informed conceptual garden layout plan for Engure, Latvia, directly addressing the identified needs of this demographic. Moreover, it implicitly proposes a user-centred design process model for healing gardens, highlighting the iterative engagement of users and stakeholders as crucial throughout the planning stages. This model offers a replicable framework for future therapeutic landscape projects grounded in user needs and service design best practices. The study also identifies a promising market opportunity for healing garden services within Latvia's social service sector, laying the groundwork for future development and implementation in the local context.

7.2. Recommendations for Future Research

Building upon the foundational insights of this research, several avenues for future exploration emerge. Within the immediate scope of this project, the subsequent "Develop" phase of the Double Diamond framework (Design Council, 2005) warrants application. This would involve prototyping and testing the proposed garden layout, ultimately leading to its implementation. Furthermore, this study's inherent limitations in exploring specific planting plans for Latvian healing gardens highlight a significant area for future research. Investigating culturally and ecologically relevant plant selections could enrich

context-specific guidelines for these therapeutic spaces. As Dilani (2014, p. xix) aptly notes, "While significant progress has been made in understanding the value of green space and access to nature, there are still inadequacies when it comes to implementation and understanding the therapeutic impact gardens have on our lives." Bridging this gap between theoretical understanding and practical, health-supporting design strategies remains a crucial challenge, necessitating further interdisciplinary research.

The development of horticultural therapy as a profession in Latvia also presents a compelling direction for future inquiry. As of 2025, the absence of formally trained horticultural therapists and educational programs suggests a potential trajectory where practitioners emerge from practical experience and subsequently advocate for formal training structures. Healing gardens could serve as valuable informal learning environments and testing grounds for these emerging professionals. Future studies could specifically explore the evolution from healing gardens to established therapeutic garden practices within the Latvian context.

Finally, while this research has focused on the potential of healing gardens for women aged 35-64, future investigations could broaden this perspective to consider the reciprocal relationship between human well-being and ecological health. Exploring the concept of the healing garden as a means to "heal Mother Earth" with the same empathy and intentionality presents a vital and timely direction for future research.

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APPENDICES

Appendix 1. Survey Questions

1. Mark the age group you belong to:
2. Mark the choice that describes your current place of permanent residency:
3. Do you currently have a garden to garden or access to one?
4. IF YES, how much time do you dedicate to gardening during gardening season?
5. How would you rate your current level of stress?
6. How often do you engage in physical activities (walking, running, gym, etc.)?
7. Do you spend time in nature (e.g., parks, gardens, forests, beaches, etc.)?
8. IF YES, within the last month, how much time do you spend weekly in natural environments (e.g., parks, gardens, forests, beaches, etc.)?
9. What prevents you from spending more time in nature? (Select all that apply.)
10. What methods do you currently use to relieve stress? (Select all that apply.)
11. Recall the last time you visited a designed green space - garden, park or other designed green public space-, which features did you use? (Check max 3 answers.)
12. Have you heard about the concept of "healing gardens" or "therapeutic gardens" before this research?
13. Have you ever visited and/or experienced a healing/therapeutic garden?
14. What associations come to your mind when you hear the term "healing garden"?
Name a few!
15. In the recent year, have you attended any of these activities? (can check multiple)
16. Which activities would make you want to visit the healing garden in Engure, Latvia?
(can check multiple)
17. Imagine a visit to a healing garden right now, which part of the garden would you most likely pick? (check multiple, if applies)
18. Which of the gardens in the pictures feels more calming for you?
- 18.a. Please comment on your choice.
19. Which of these garden seating options seems more relaxing for you?
- 19.a. Please comment on your choice.
20. Which 3 elements would you most likely enjoy during your healing garden experience? Please mark 3 choices.
- 20.a. Please comment on your choice.

21. Do you think a garden designed for relaxation and well-being would benefit you?
22. If a healing garden in Engure, Latvia would be available, how likely would you be to visit it this summer?
23. What would you like to experience in such a healing garden?
24. Your comments and suggestions.
25. While the survey is anonymous, you can choose to leave your e-mail to receive the final work of this research and updates on the Healing Garden in Engure, Latvia. Upon leaving your email, you agree that it is stored for up to 5 years to communicate updates about the healing garden. You can withdraw your consent at any time by writing to edite.millere@gmail.com