

Walking With Confidence

*Safety Risks, Awareness, and Design
Opportunities in Dog Walking for Older Adults*

Research Report

by Harrison Whitten

Capstone 2025

Word Count: 4423



Authenticity Statement

This is to certify that to the best of my knowledge, the content of this report is my own work. This report has not been submitted for any subject or for other purposes. I certify that the intellectual content of this report is the product of my own work and that all the assistance received in preparing this report and sources have been acknowledged.

Your name: **Harrison Whitten**

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Date: **10/08/2025**

AI Use Statement

I have utilised Generative AI in this report, ChatGPT and Grammarly to assist in various ways. The way I have used AI includes corrections in spelling and grammar using Grammarly throughout the report. ChatGPT was used for suggestions to improve fluency in some parts, to reduce the word count where sections were over in length, and to merge an overlapping paragraph to keep the report concise. These AI tools did not generate any research content but only assisted with editing and presenting my findings more clearly and effectively.

Your name: **Harrison Whitten**

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Executive Summary

This report explores the challenges older adults face when walking their dogs. This is a task that provides major health and companionship benefits, but at times, it becomes risky and intimidating due to various external factors. With age comes natural declines in strength, balance and confidence, which combine with unpredictable dog behaviour and environmental hazards to increase the risk of injury. This project aimed to explore these issues and identify opportunities for design to better support older dog owners.

A mixed-methods approach was used, including two observations, a survey including both qualitative and quantitative questioning, which accrued 25 respondents, and two in-depth interviews. Triangulation strengthened validity, with surveys showing scale, interviews providing depth, and observations revealing contextual behaviours.

Findings revealed four recurring themes: dog strength versus handler capability, environmental unpredictability, confidence and psychological barriers, and adaptation or avoidance behaviours. Across all, contextual awareness was the central factor causing injury risk.

These findings formulated five design implications: enhanced control systems, proactive safety features, confidence-building design, adaptive and inclusive use, and human-dog interaction. Current products have proved to force trade-offs between control, comfort, and safety. This report concludes that there is a clear opportunity for well-rounded solutions that can balance safety, reassurance and participation, empowering older adults to continue walking their dogs with confidence.

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01

Introduction

Background

Benchmarking

Introduction

Consider an elderly dog owner who hesitates before each walk. Whilst they value the companionship and exercise their dog provides, concerns about strength, balance and safety often outweigh these benefits. This hesitation is not uncommon as over two-thirds of older Australians report that fear of falling prevents them from participating in daily activities, (Figure 1) (NeuRA, 2025).

Many elderly people experience a lack of confidence, a fear of falling, and other physical limitations that make handling their larger dogs during walks extremely confronting, so much that this ‘simple’ task has become intimidating or even unsafe for these users. This ultimately leads to owners leaning towards the ownership of smaller dogs, despite their personal preference.

This project aims to explore the challenges older adults face when walking their dogs, focusing on safety risks, confidence barriers, and unpredictable environments. The goal is to uncover design opportunities that empower users to walk with safety and confidence, while strengthening companionship and supporting their health.

This report is guided by values that emphasise proper treatment of dogs and does not condone mistreatment in any form. It aligns with animal welfare principles such as the Five Freedoms of Animal Welfare (RSPCA, 2021).

Fear of Falling Statistics



Figure 1: Pie Chart representing the percentage of Australians reporting a fear of falling (Neura, 2025)

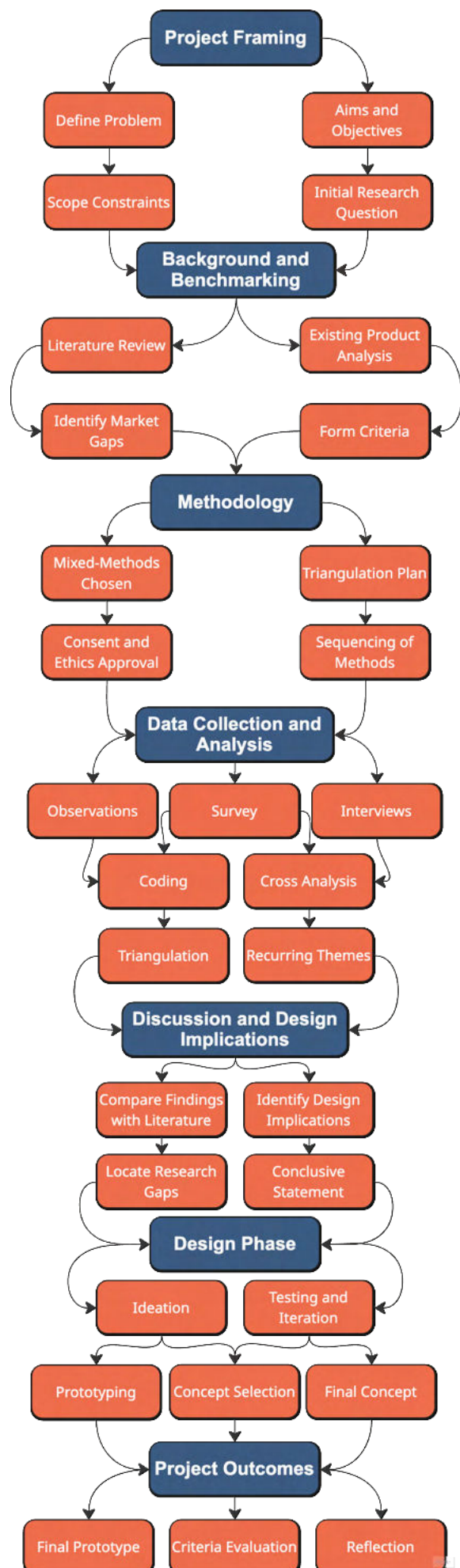


Figure 2: Overall Project Structure

Background

This section outlines the challenges that dog walking presents for older adults. Several factors influence this, including physical decline, psychological barriers, safety risks, dog behaviour and environmental conditions. Literature, case studies and statistics highlight the barriers older adults face and the benefits at risk.

Physical Limitations and Movement Dynamics

With age, declines in strength, balance, grip, and reaction time make controlling a dog more difficult. One in four Australians 65+ fall each year (ANZFPS, 2018) (Figure 3) and falls cause 77% of hospitalisations in this group (AIHW, 2018) (Figure 4). Gait and posture issues, such as imbalance, swaying, or 'shuffling' steps (Cleveland Clinic, 2023), combined with unpredictable dog movements, significantly increase the risk of injury.



Figure 3: One in four Australians aged 65+ fall every year (ANZFPS, 2018)

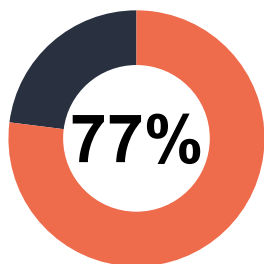


Figure 4: 77% of hospitalisations are falls (AIHW, 2018)

Confidence, Fear and Psychological Barriers

Fear of falling is a major psychological barrier that can prevent dog walking. As Neura (2010) states, "fear leads to a downward spiral", where the anticipation of falling reduces activity. Nearly 40% of older adults worry excessively about falls, sometimes experiencing anxiety or hesitation in their movements (VeryWell Health, 2022). One in four report stopping activities altogether (Bright, 2023). Falls or near misses threaten independence and dignity, often causing distress (Dolan and Taylor-Piliae, 2020) and avoidance

behaviours (Sultan, 2025). For older dog owners, this fear limits activity, creating isolation and weakening companionship (Figure 5).



Figure 5: Fear of falling and psychological impacts

Safety Risks and Vulnerability

Older adults face significant safety risks when walking dogs. Therapists report treating injuries such as broken bones and soft tissue damage from tangled leads (Heaney, 2025). Those over 65 are especially at risk due to osteoporosis, poor balance, and reduced vision. Common causes include sudden pulling, leading to tripping, tangling, or upper limb injuries (Rosa, 2024), often resulting in fractures or serious complications (Colorado Advanced Orthopedics, 2024).

Dog Behaviour and Handling Challenges

Dogs' physical and behavioural traits, such as pulling, lunging, or reactivity, can easily overwhelm older owners' motor skills. Constant exposure to new sights, smells, and sounds may trigger fear, aggression, or over-excitement, leading to behaviours such as lunging, pulling, or barking (Trott, 2021). Common triggers include people, other dogs, traffic, or bikes, though every dog is different, making it vital to stay alert to what causes nervousness (Patterdale, 2024).

Environmental and Social Context

Environmental and social factors strongly affect safety and enjoyment. Older adults favour level pathways in “brighter, lighter streets with clear sightlines” (Oxley et al., 2016) while “slippery or uneven footpaths, poor crossings, kerbs, and inadequate lighting” increase fall risk (WHO, 2008). Socially, dog walking provides routine, exercise, companionship and interaction. Without it, older adults may face loneliness and isolation, increasing risks of physical and mental conditions (NIA, 2019) and premature death up to 29% (Mihalopoulos and Engel, 2024).

Summary

Elderly dog owners face a mix of physical, psychological, behavioural and environmental barriers with risks and safety concerns consistently reducing confidence and participation. As the Nia (2022) states, “Taking care of your physical, mental and cognitive health is important for healthy ageing, and are basic elements in your daily life that can help you live longer and better.” The paradox is that those who need those benefits most often face the greatest difficulty. Recognising these experiences provides a foundation for benchmarking and guides how design can empower older adults to walk their dogs safely.

Benchmarking

Benchmarking compares existing products against specific criteria to identify strengths, weaknesses, and ultimately reveal gaps and opportunities using diagrammatic methods.

Product Information Grid

Figure 6 provides an overview of eight existing dog walking and training solutions, including their names, abbreviations, and short descriptions. Defining each product ensures clarity before applying benchmarking methods.

Product Title	Image	Brand	Abbreviation
Gentle Leader Head Collar		PetSafe	Head Collar
Halti Training Harness		Halti	Halti Harness
Flexi Comfort Retractable Leash		Flexi	Retractable Leash
TugEase Shock Absorbing Leash		TugEase	Shock Absorbing Leash
Ruffwear Front Range Dog Harness		Ruffwear	Front Range Harness
Might Paw Dual Handle Leash		Might Paw	Dual Handle Leash
EzyDog Zero Shock Leash		EzyDog	Zero Shock Leash
WalkDog Plus Hands-Free Leash		WalkDog	Hands-Free Leash

Figure 6: Product Information Grid for Benchmarking

Heatmap

The heatmap visually compares the eight products against key criteria, considering where owner capability and dog behaviour intersect (Figure 7). Ratings were based on vet recommendations, reviews, user blogs, and product pages.

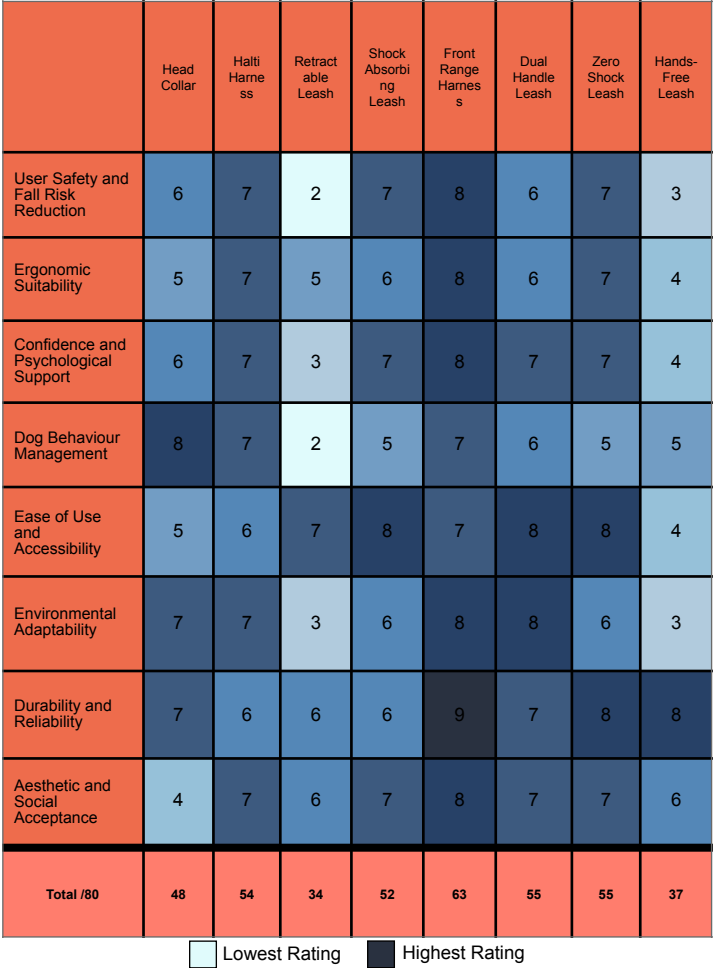


Figure 7: Heatmap Rating Products Against Criteria

The heatmap shows broad patterns, headcollars and front-clip harness generally score higher in safety and behaviour management, whilst retractable and bike-focused devices score lower in control and adaptability. While useful for spotting trends, comparisons remain difficult, so data is used in radar maps for clearer performance visualisation.

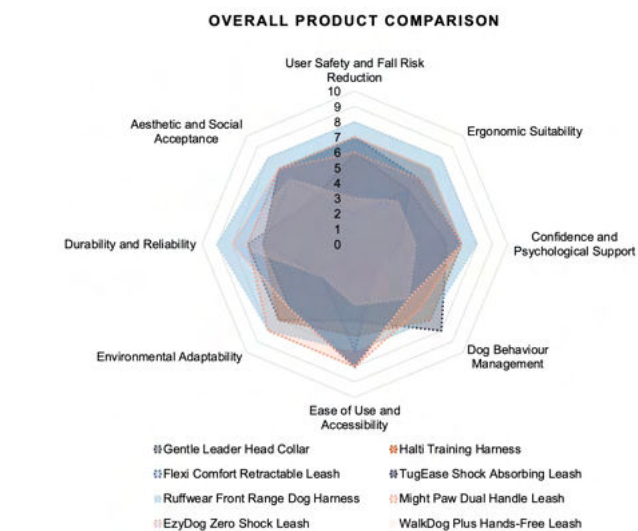


Figure 8: Overall Products Radar Map

Overall Products Map

Radar maps show that no product excels in all areas, leaving the market divided. Harnesses rate higher in safety and control, while leashes rate higher in ergonomics and adaptability. The retractable leash is weakest overall, while the front-range harness and zero-shock leash are more balanced, although flaws remain.

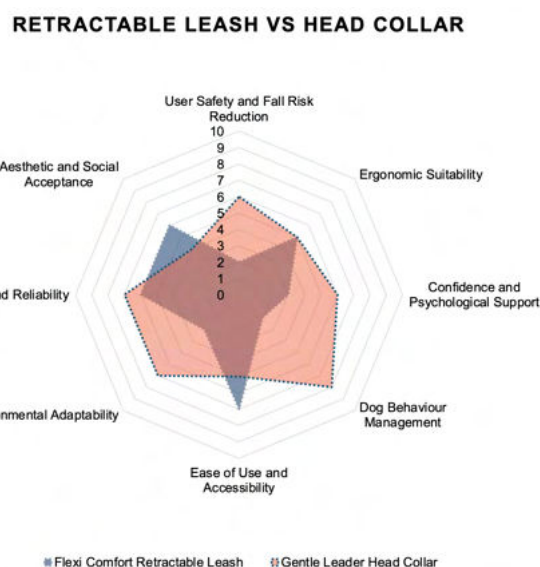


Figure 10: Two Product Comparison (Retractable Leash versus HeadCollar Radar Map

Headcollar vs Retractable Leash

At opposite ends of the spectrum, the retractable leash scores high in ease of use but low in safety, while the headcollar offers control and safety but weak usability and aesthetics. This shows the lack of a product that balances safety with ease of use.

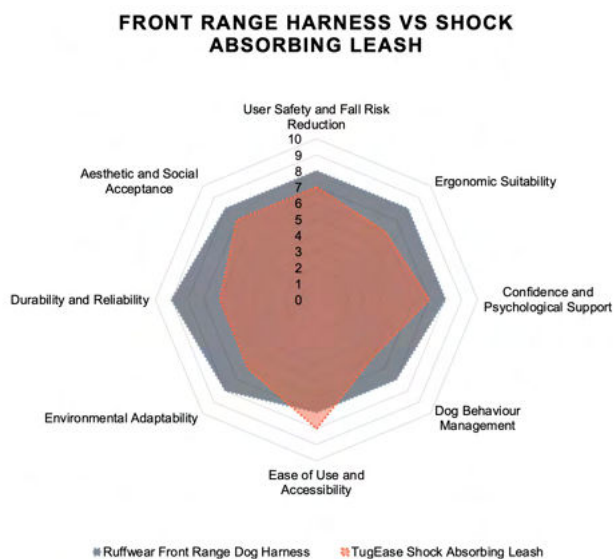


Figure 9: Two Product Comparison (Front Range Harness versus Shock Absorbing Leash) Radar Map

Front range harness vs shock-absorbing leash

These two represent widely adopted but incomplete solutions. The harness performs strongly in ergonomics, adaptability and control, while the shock-absorbing leash reduces fall risks through impact absorption. Compared directly, they suggest that products address single aspects rather than providing balanced solutions.

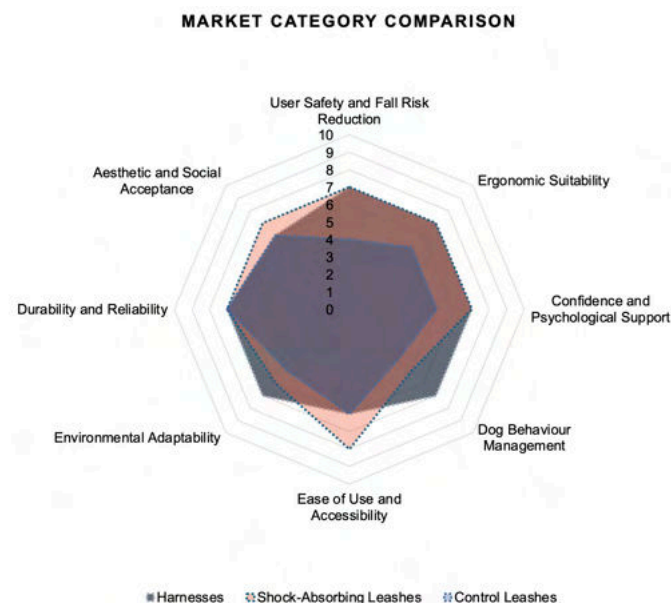


Figure 11: Market Category Comparison Radar Map

Category Comparison

Category-level analysis shows consistent weaknesses. Shock-absorbing leashes perform well for fall-risk reduction but lack adaptability and ergonomics. Controlled leashes offer convenience but compromise safety. Harnesses provide strong ergonomics and control but perform poorly in impact absorption.

IDEAL PRODUCT OVERLAY

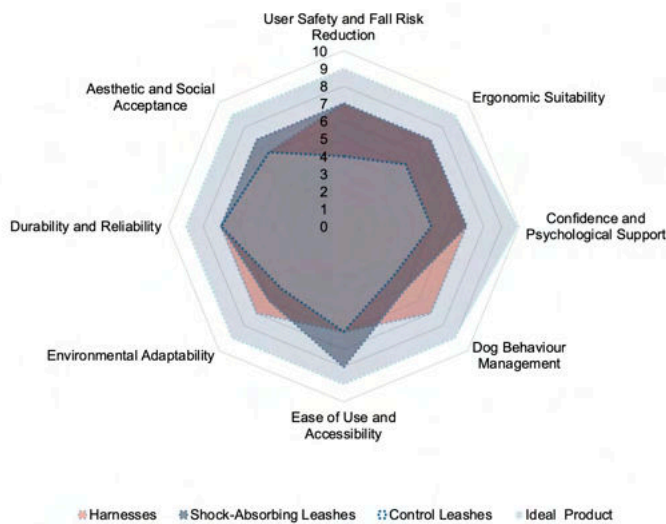


Figure 12: Ideal Product Overlay Radar Map

Ideal Product Overlay

Overlaying an “ideal” product highlights criteria consistently neglected across the market, particularly fall-risk reduction and adaptability. No current product addresses the breadth of user needs.

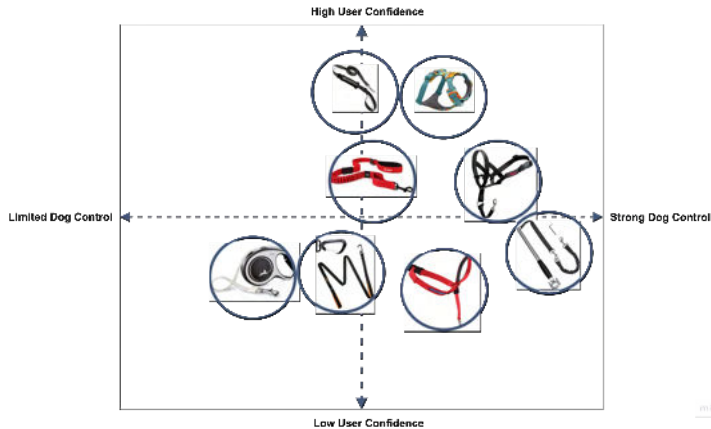


Figure 13: Product Evaluation Matrix Using User Confidence versus Dog Control as Metrics

Product Evaluation Matrix

The matrix compares products against two criteria: dog control and user confidence. Harnesses offer high user confidence but limited control, while hands-free leashes provide control at the expense of reassurance. Retractable and dual-handle leashes perform poorly in both areas. This shows that confidence and control rarely coexist in one solution.

Gaps and Opportunities

The evaluation matrix shows how current products force trade-offs, either user confidence and comfort or strong dog control, rarely both. This presents an opportunity for a product that delivers strong control without compromising reassurance.

Radar maps confirm these gaps. The front-range harness offers ergonomics and control, while the shock-absorbing leash reduces fall risk, but neither integrates both. Similarly, the headcollar and retractable leash heavily prioritise singular criteria, one prioritises safety, and the other ease of use, leaving no middle ground.

At the category level, shock-absorbing leashes excel in fall-risk reduction but lack adaptability, retractables offer convenience but compromise safety, and harnesses provide control and ergonomics but no impact absorption. The ideal overlay reinforces this, showing fall-risk reduction and adaptability as consistently overlooked criteria.

Collectively, findings show the market lacks a well-rounded solution. Users are forced to compromise, accessing products that excel in single areas but not overall. This provides a strong opportunity for a new design that combines strengths across criteria. For example, a harness with integrated shock absorption and controlled extension. This solution would balance safety, ergonomics, control and reassurance, satisfying unmet needs and clearly differentiating itself as a versatile product.

Summary

Benchmarking techniques (radar maps, heatmaps and evaluation matrix revealed trade-offs across the market. No product currently delivers safety, control, comfort and reassurance together, pinpointing a clear opportunity for a well-rounded solution.

02

Research

Analysis & Findings

Research

This research used a mixed-methods approach, combining qualitative and quantitative techniques to balance breadth and depth. Surveys provided a broad understanding of experiences, while observations and interviews added detailed insights that numbers alone could not provide.

Triangulation was key. In research, triangulation means using multiple methods to strengthen validity, rather than relying on a single perspective (Noble and Heale, 2019). As shown in Figure 14, surveys, observations, and interviews reinforced each other, with the strength of one balancing the weaknesses of another.

The sequencing of methods is shown in Figure 15. The process began with observations, which identified micro-details and an initial understanding of user behaviour. From there, the survey widened the scope, exploring how people interact with dog walking products in varied scenarios. Finally, two users were interviewed to share the personal side of experiences, including frustrations, reassurances and reactions, not visible in statistics.



Figure 14: Triangulation Method

Acknowledgement of Consent Forms

Consent forms were sent to participants at each stage when appropriate to ensure their comfort and requests were respected.

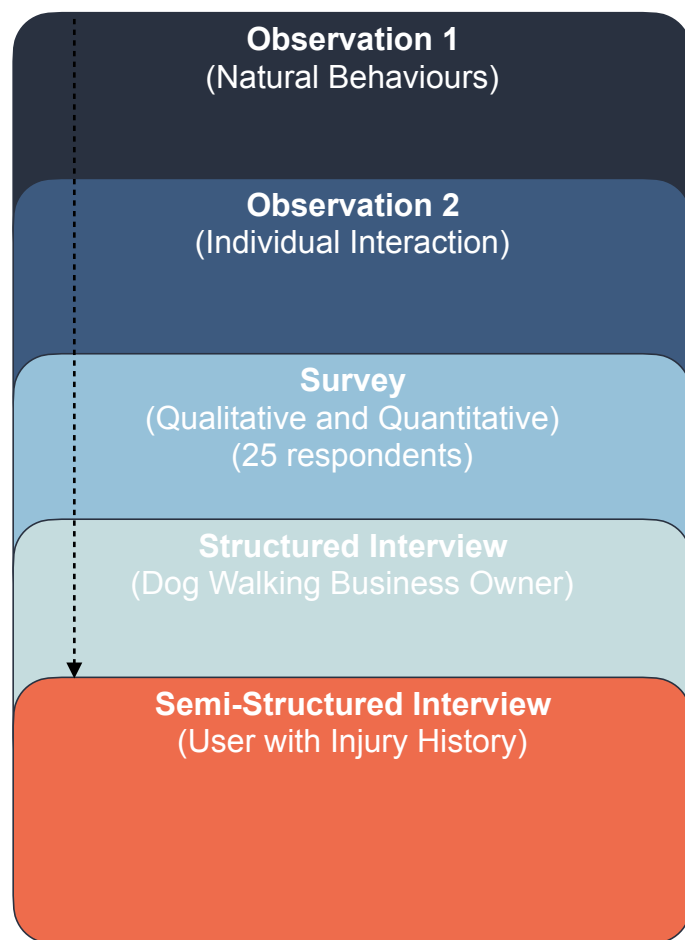


Figure 15: Sequencing of Methods

Methods

Observation 1

The objective was to test the process and determine what should be noted, including frequency and visibility of behaviours. At Des Connor Flats, two older women were observed walking a golden retriever and a poodle. Both their interactions and the dogs' behaviours provided insight into shared walking challenges.

The first observation tested the process and clarified what should be noted, including visibility and frequency of behaviours. At Des Connor Flats, two older women were observed walking a golden retriever and a poodle. Their walking behaviours, interactions and reactions offered insight into challenges when handling dogs in unpredictable environments.

Observation 2

The second observation, also at Des Connor Flats, took place during a busier time. It focused on a middle-aged woman walking with her English bulldog, “Oscar.” Who wore a front-range harness. She was selected to assess the level of control in a crowded environment and how her chosen equipment impacted her experience.

Survey (Qualitative and Quantitative)

The survey assessed how users from different backgrounds interact with and respond to various dog walking scenarios, aiming to identify recurring issues, patterns, and opportunities for design. It was created and developed in Microsoft Forms and distributed through family and friends. All 25 respondents were dog owners, completing a mix of close-ended (quantitative) and open-ended (qualitative) questions.

The survey was broken into five sections, refer to figure 16:



Figure 16: Five Survey Sections Diagram

Quantitative Survey Questions

Displayed in multiple-choice and scaled formats to explore habits and safety concerns, allowing consistent trends to surface across participants.

Qualitative Survey Questions

Open-ended questions in sections 3-5 (e.g. unsafe experiences, confidence issues, suggested improvements) encouraged

participants to describe challenges and needs in detail, sharing difficulties and potential design opportunities.

Structured Interview

Dog Walking Business Owner

The participant was chosen for their professional experience managing multiple dogs, client expectations and safety and control challenges they faced. They were asked about a range of dog walking scenarios, with a focus on interactions with people and dogs, risk anticipation, and any methods or equipment used to prevent incidents. A structured format was chosen to maintain focus and form clear insights. This interview contributes to triangulation by offering a macro-level perspective on dog walking risks.

Semi-Structured Interview

User with Dog-Related Injury History

This participant was selected for first-hand experience of injuries caused by dog interactions, providing insight into safety gaps and validating the need for new solutions. The semi-structured format combined guiding questions with flexibility for elaboration, allowing the participant to explore experiences in depth. This added micro-level insights into fall risks and user vulnerabilities.

Participant	Background	Interview Type	Focus	Contribution
Dog walking business owner	Manages 4-6 dogs daily	Structured	Strategies, prevention	Macro-level insights
Active Owner of multiple dogs	Dog-related injury history	Semi-Structured	Risks, fear, confidence	Micro-level experiences

Figure 17: Interview Information Grid

Analysis and Findings

Dog walking may appear ordinary, but the risks, behaviours and emotions tied to it are complex. This section (analysis and findings) brings together three forms of evidence, survey responses, in-depth interviews and real-world observations to uncover the recurring challenges faced by dog owners.

Using triangulation, where insights are compared across quantitative, qualitative, and contextual methods, validity is strengthened by revealing key patterns (Figure 18). The findings are presented in layers, surveys reveal breadth, interviews add depth, and observations identify behaviour. Recurring themes are introduced in this section but are reserved for deeper reflection and discussion in section 3.

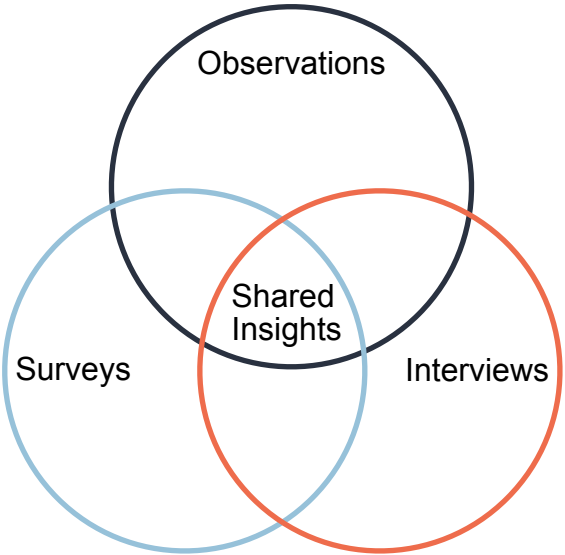


Figure 18: Venn Diagram of Triangulation Used for Comparing Insights



Figure 19: Sketch Providing Context for Observation One

Observation 1

The first observation took place on a late Sunday afternoon at Des Connor Flats, focusing on two older women walking a golden retriever and a

poodle. Despite efforts to minimise distraction, the dogs pulled toward each other, causing sharp leash corrections. One owner nearly tripped on broken pavement, showing how divided attention reduces control. This shows that compromised awareness increases injury risk, with leash techniques remaining reactive rather than preventative.



Figure 20: Personal Sketch Providing Context for Observation Two

Observation 2

The second observation included a middle-aged woman with a smaller physique walking a strong English bulldog named Oscar, as seen on the front-range harness he was wearing. The owner frequently held the leash loosely or let it go, suggesting fatigue, low confidence, or trust. Whilst avoiding other dogs, she positioned herself between Oscar and a larger dog before he lunged. Instead of resisting, she released the leash entirely. Fortunately, the dog interaction was friendly. However, it emphasised the limits of equipment and the critical role of owner strength and confidence in preventing injury.

Stages	Pre-walk stance	Walking	Encounter	Dog Lunges	Outcome
Action	Standing still	Walks slowly	Switches leash hand	Leash released	Friendly interaction
Experience	Possible fatigue	Scanning, avoiding	Shielding, anticipation	Fear, helplessness	Relief, luck
Pain Point	Low control	Fatigue, vigilance	Limited confidence	No control, high risk	Dependable on luck

Figure 21: Small journey map of observation 2

Summary

The observations identified natural, uncontrolled behaviours between users and dogs in public settings. Owners reacted rather than anticipated risks, with equipment such as harnesses and collars proving insufficient when mismatched against a dog’s strength. Divided attention and fatigue clearly reduce control, increasing injury risk. Ultimately, contextual awareness has been highlighted as the critical factor, as risks escalate when environmental triggers are not anticipated. These insights form a foundation that leads to survey findings.

Survey Findings

Quantitative Trends

The survey revealed consistent patterns in both walking frequency and safety concerns. 59% walked their dogs daily and 32% a few times a week, showing routine behaviour often overshadowed by safety risks. “Encounters with other dogs” emerged as the main concern, reported by 64% of participants, followed by “sudden pulling” at 21% and “tripping and falling” at 9% (Figure 22). These concerns align with equipment preferences, as 43% of respondents use harnesses, and 50% identified “control” as the most valued product feature. Confidence also plays a critical role, as 32% reported their dog’s size affects confidence, while 55% admitted they had changed how, when or where they walked due to safety or confidence issues. This connects closely with handling style as 32% encouraged their dogs to focus solely on them, while the remainder preferred socialising with other people, dogs or other factors (Figure 23). Importantly, 95% of participants emphasised the well-being benefits, showing that despite risks, dog walking remains crucial to health and companionship.

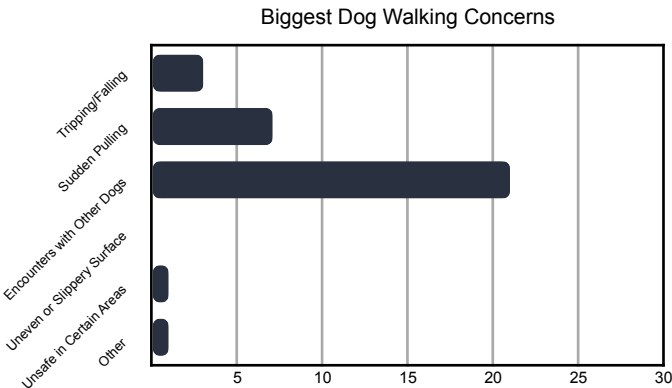


Figure 22: Bar Chart Showing Survey Responses of ‘Biggest Dog Walking Concerns’



Figure 23: Pie Chart Showing Survey Responses to What Owners Encourage Their Dogs To Do”

Qualitative Insights

The short-answer survey responses added depth to the statistics, showing how risks are experienced. Off-leash dogs, sudden pulling and falls were the most frequently described incidents, often leading to avoidance behaviours such as walking only during the day, changing routes, or picking up smaller dogs for protection. Feedback was split as some praised Halti Harnesses for control, while others suggested more comfortable leashes, safer collars, or innovative alert systems. These responses show how individual concerns translate into behavioural adaptations. Figure 24 shows these links, mapping common concerns (e.g. pulling, other dogs, unsafe areas) to avoidance strategies (time changes, altered routes, protective actions) and product needs (better control, added reassurance). Together, these findings identify three consistent issues: dog strength versus handler capability, environmental risks, and user confidence, which form the foundation for further exploration in the interviews, where real experiences behind these patterns become clearer.

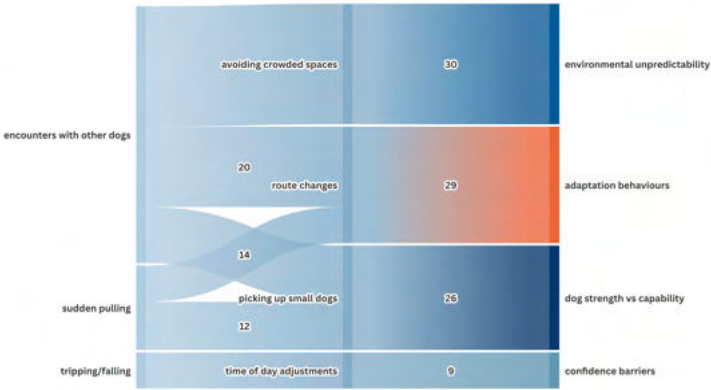


Figure 24: Sankey Diagram of Survey Responses Connecting Main Concerns to User Strategies and Recurring Themes (Flourish Studio)

Structured Interview

The structured interview with the professional dog walker provided macro-level insights into managing 4-6 dogs simultaneously while anticipating external risks such as off-leash dogs, cyclists, and crowded areas. The most central finding was that prevention is more valuable than reaction. Strategies like route planning and the 'calm start' rule proved more effective than reacting after problems arise. As the participant explained, "we don't start the walk until are dogs are calm", another rule that limits distractions and reduces the chance of unpredictable triggers.

To reinforce this approach, the walker employs various tools and techniques, including harnesses, haltis, double leashes, and a dog-walking belt. Larger or stronger dogs are often fitted with haltis to ensure enforceable control, while double leashes are used as reinforcement/backup in case of failure. These methods reflect proactive risk management and align with survey findings, where respondents identified sudden pulling and encounters with other dogs as their main concerns. This perspective on prevention sets up a contrast with interview 2, which explores the real experiences of injury and vulnerability.

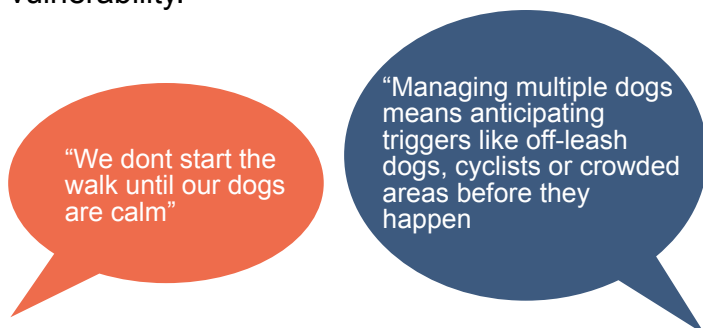


Figure 25: Insightful Quotes from Structured Interview

Semi-Structured Interview

The semi-structured interview with the dog owner who has experienced multiple injuries provided a critical micro-level perspective, centred on the importance of contextual awareness. They explained their severe ankle sprain caused by their "over-enthusiastic border collie", describing it bluntly as "you don't see the risks until it's too late". Their reflections extended to the unpredictable behaviour of 'packing' groups of dogs, mentioning that "a couple will start running, then they excite the others, and soon four or five dogs are charging, a scenario that is overlooked

until an accident occurs. They were also critical of inattentive owners, remarking that "the people are dangerous because they're not looking at what their dogs are doing," which they felt significantly increases the risk for everyone sharing the same space. Crowded, confined parks were described as chaotic and unsafe, with their reference leaning toward larger open areas that would allow for calmer, more confident, and enjoyable walks. Despite repeated injuries, they continue walking their dogs, stressing, "you just have to keep going, if you stop, the dogs suffer too." This interview highlighted how vigilance, awareness, and the walking environment all play a critical role in forming safety, confidence, and wellbeing for both owner and dog.



Figure 26: Insightful Quotes from Semi-Structured Interview

Cross Analysis

The purpose of the cross-analysis is to connect insights from both interviews, comparing professional strategies with injured users' experiences. This identifies recurring risks, environmental unpredictability, the need for strong control products, and how perspectives converge on the same challenges (Figure 27).

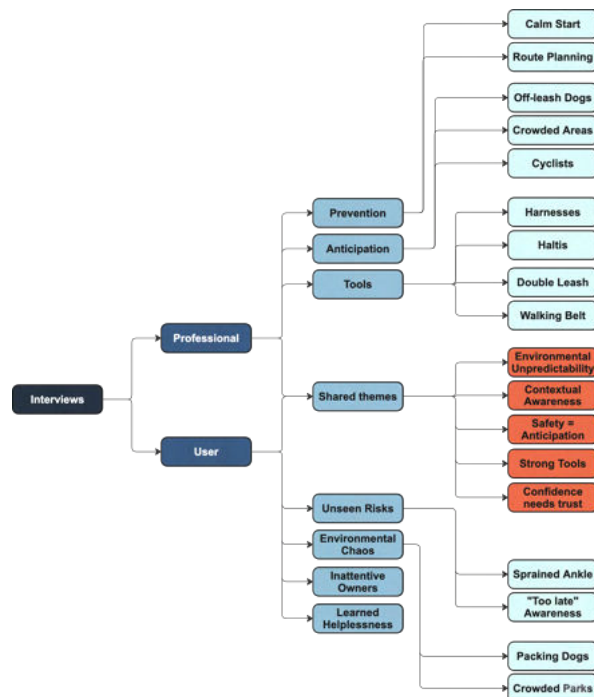


Figure 27: Cross Analysis Coding Tree

Combined Coding, Triangulation and Brief Summary

Throughout the triangulation of surveys, interviews, and observations (Figure 28), four recurring themes became clear: strength versus capability, environmental unpredictability, confidence barriers, and adaptation behaviours.

Together, these reinforced contextual awareness as the central factor causing injury risk. These findings align with falls, pulling and unsafe environments, framing section 3 where their implications are discussed.

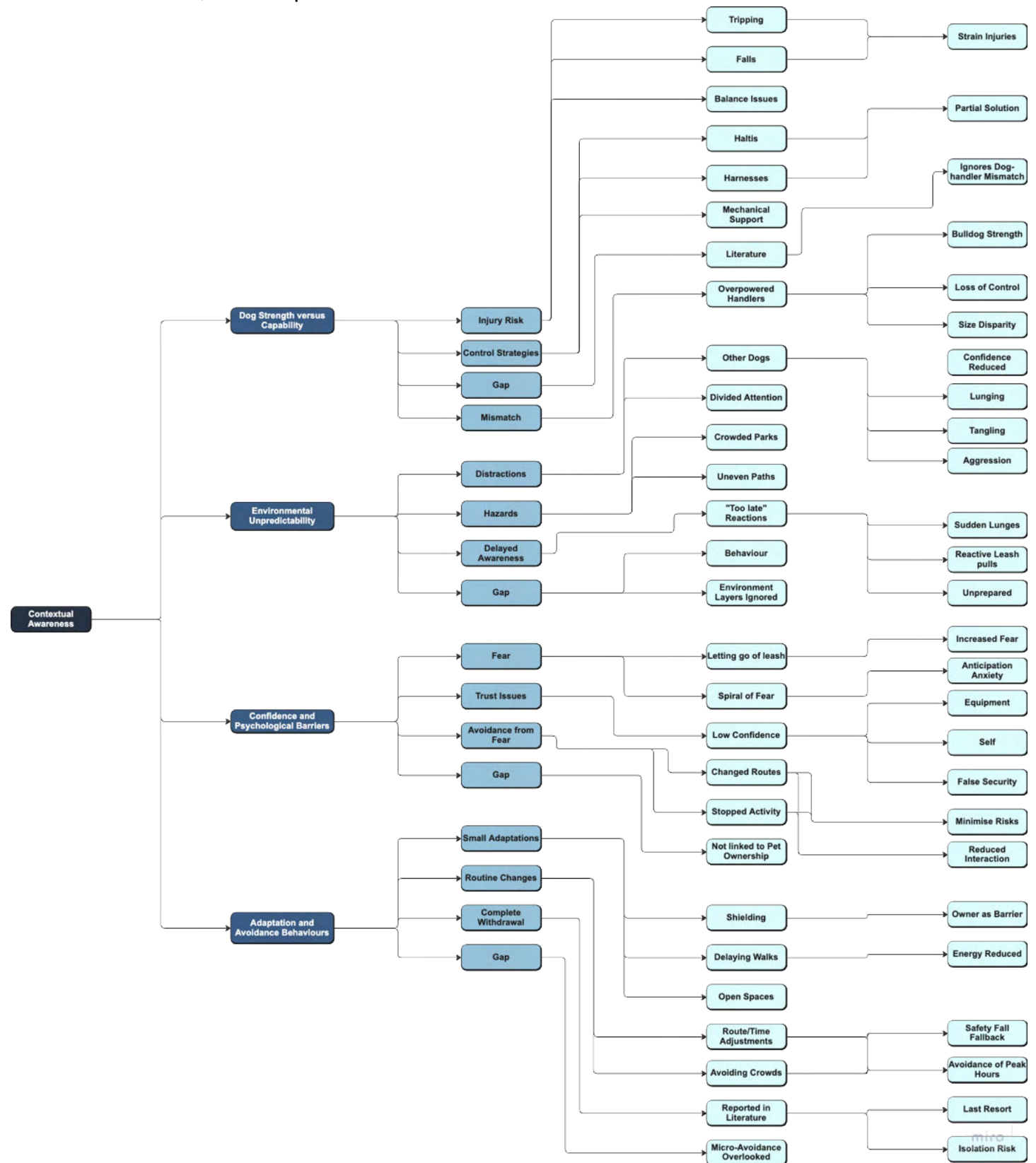


Figure 28: Thematic Coding Tree from Triangulated Findings

03

Discussion

Design Implications

Conclusion

Discussion

The findings identified four key themes: dog strength versus handler capability, environmental unpredictability, confidence and psychological barriers, and adaptation and avoidance behaviours. This discussion looks at each theme in relation to the literature, intending to point out research gaps.

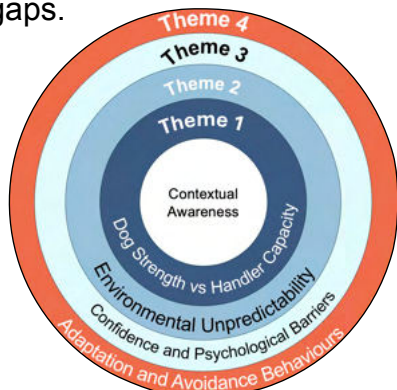


Figure 29: Layered Diagram of Recurring Themes from Triangulated Findings

Theme 1

Dog Strength vs Handler Capability

Findings consistently showed that older adults struggle with stronger dogs. In the survey, 32% reported their dog's size reduced confidence, while the observation of a woman with an English bulldog highlighted a clear physical mismatch that compromised her control. This connects with literature mentioning 77% of hospitalisations in older adults are due to falls (AIHW, 2018), often caused by balance issues and slow reactions (HealthDirect, 2025). The gap is that while falls are well-documented, research rarely addresses how handling dogs intensifies these risks.

Theme 2

Environmental Unpredictability

Findings showed how environmental unpredictability increases injury risk, often linked to lapses in contextual awareness. In the structured interview, a professional emphasised prevention over reaction, while the semi-structured interview revealed concerns about crowded parks and inattentive owners. Survey results reinforced this, with 64% of participants identifying encounters with other dogs as their main safety concern. Observation one also showed how divided attention reduced control and increased the chance of risk. This aligns with literature on unsafe environments and fall hazards such as uneven footpaths and poor

lighting (WHO, 2008). The gap is that current research rarely considers how dog behaviour and lack of contextual awareness increase the layers of unpredictability.

Theme 3 Confidence and Psychological Barriers

Findings showed that confidence and psychological barriers create hesitation and fear for dog-walking users. In the second observation, a woman released her bulldog's leash entirely when he lunged, likely due to fear of injury. Survey responses supported this, with sudden pulling and falls among the most common incidents. Literature corroborates these patterns, with fear of falling linked to a downward spiral of reduced activity and avoidance (NeuRa, 2010; Sultan 2025). Nearly 40% of older adults report anxiety or hesitation in movement (VeryWell Health, 2022). The gap is that while literature displays confidence broadly, limited research actually explores how pet ownership and dog handling intensify these psychological risks.

Theme 4

Adaptation and Avoidance Behaviours

Avoidance strategies appeared across all primary research methods. In the second observation, a woman shielded her dog to avoid others, while the survey revealed 55% of respondents had changed how, when, or where they walked due to safety or confidence issues. The structured interview reinforced this with the strategy of delaying walks until dogs were calm. Literature often refers to avoidance as complete withdrawal, linked to reduced health, loneliness and loss of independence (NIA, 2019; Mihalopoulos and Engels, 2024). These findings suggest a broader range of avoidance, from subtle adaptations to disengagement, showing a gap in research that rarely considers micro-avoidance behaviours. Recognising these smaller-scale strategies creates an opportunity for design to benefit participation without increasing avoidance.

Across all themes, contextual awareness was consistent as the missing factor. This matches what past research establishes, but also shows that dog ownership makes ageing risks worse. These findings point to the need for designs that improve safety, control and confidence.

Design Implications

The findings and discussion show clear implications for design, showing both problems and opportunities. This section builds on those insights alongside benchmarking research, aiming to state the key problems and explore the design opportunities they create.

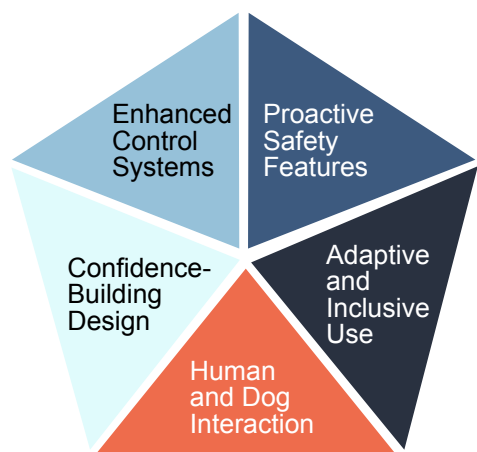


Figure 30: Pentagon Framework of Design Implications

Enhanced Control Systems

The physical mismatch between dog and handler is shown in the semi-structured interview, where the user felt overpowered by larger, energetic breeds, and in the second observation, where control over a bulldog was lost. As explored in theme 1 of the discussion, the mismatch compromises safety, particularly when combined with natural declines in gait and posture. This provides a clear design opportunity for products that increase control without relying on user strength. Benchmarking found useful examples such as shock-absorption systems, while participants also suggested mechanical solutions, including a pulley system to reduce upper-body effort.

Proactive Safety Features

Environmental unpredictability and delayed awareness were key problems across the research. In observation one, divided attention caused an owner to nearly trip while reacting to her retriever. Survey findings supported this, with 64% of participants identifying encounters with other dogs as their main concern. The semi-structured interview identified crowded parks,

inattentive owners and the warning that ‘you don’t see the risks until it’s too late.’ Current products only respond after incidents occur, revealing an opportunity for a design that anticipates. A design that can cue owners early through indicators such as vibration or light features to prevent these risks.

Confidence-Building Design

Psychological barriers were a consistent problem across the research, reducing user confidence and participation. In observation two, the owner released the leash entirely, suggesting fear or a lack of trust in their ability to control the dog. Survey results supported this, with pulling and falls being the most reported incidents, suggesting a lack of confidence in their equipment and themselves. Literature also supports this, identifying fear of falling creates a downward spiral of reduced activity and avoidance (NeuRa, 2010). These findings provide an opportunity for design to improve confidence, empowering users through a product or mechanism designed for reassurance.

Adaptive and Inclusive Use

Avoidance behaviours were evident across methods, with 55% of survey participants changing how, when or where they walked due to safety concerns. Observations and interviews showed strategies such as shielding, route changes and avoiding crowded times, whilst it was mentioned that the user from the structured interview delays walks until all dogs are calm. These examples show the lack of adaptability in current products, forcing users to compensate through avoidance. Literature defines avoidance as complete withdrawal, overlooking these smaller adaptations. This provides an opportunity for versatile, modular products that adapt to different environments or scenarios.

Human and Dog Interaction

Current products are designed either for the dog, focusing on control and training, or for the owner, prioritising comfort and ergonomics, but rarely consider the dynamic between both. Observation one showed how two dogs distracted each other, forcing sharp owner reactions, while survey findings revealed that owners often struggle with interactions in public spaces. The semi-structured interview described chaotic 'packing' behaviour, where one dog excites others and overwhelms owners. These findings present a clear opportunity for designs that recognise the shared interaction between user and dog, improving the overall walking dynamic.

These implications create a foundation for design solutions that go beyond simple restraints, empowering older adults to walk their dogs with confidence while balancing safety, reassurance, and participation.

Conclusion

This project aimed to explore the risks and challenges faced by older adults walking their dogs, with a focus on safety, confidence and unpredictable environments. Dog walking remains highly valuable for health and companionship. However, current products and solutions do not fully address the risks faced by the users. Findings from observations, surveys, and interviews revealed consistent patterns. Safety risks were connected to physical mismatches between owner and dog, environmental unpredictability, divided attention, and psychological barriers such as fears of falling. These results align with existing literature on falls and unsafe environments and also extend it by linking directly to dog handling. Contextual awareness was identified as the missing factor across all scenarios, showing how a lack of anticipation increases injury risks.

From the findings, five clear design implications were identified: enhanced control systems, proactive safety features, confidence-building design, adaptive and inclusive use, and human-dog interaction. Each of these explores overlooked needs and reveals gaps in current solutions. The research shows that while dog walking offers many benefits, safety risks and confidence concerns often limit or prevent older adults from fully experiencing them. This reinforces the need for innovation. The report concludes that new designs can empower older adults to walk safely, boost confidence, and strengthen the bond with their dogs.

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