Integrated Practice: Expert-Informed Physical Exercise Regimens to Enhance Vocal Athlete Performance

Anna Holden
2118218

Module 6 - BMPF7010 Presentation
9 September 2024

VOICE STUDY CENTRE

Prifysgol Cymru
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University of Wales
Trinity Saint David

Introduction

Findings

Methodology

References

Discussion



Rational

- Personal Background
- Vocal athlete (VA)

(LeBorgne & Rosenberg, 2019)

- Integrated practice via physical exercise regimen (PER)
- VA performance demands

(Friedlander, 2018; Chandler, 2022)

- Interdependent needs

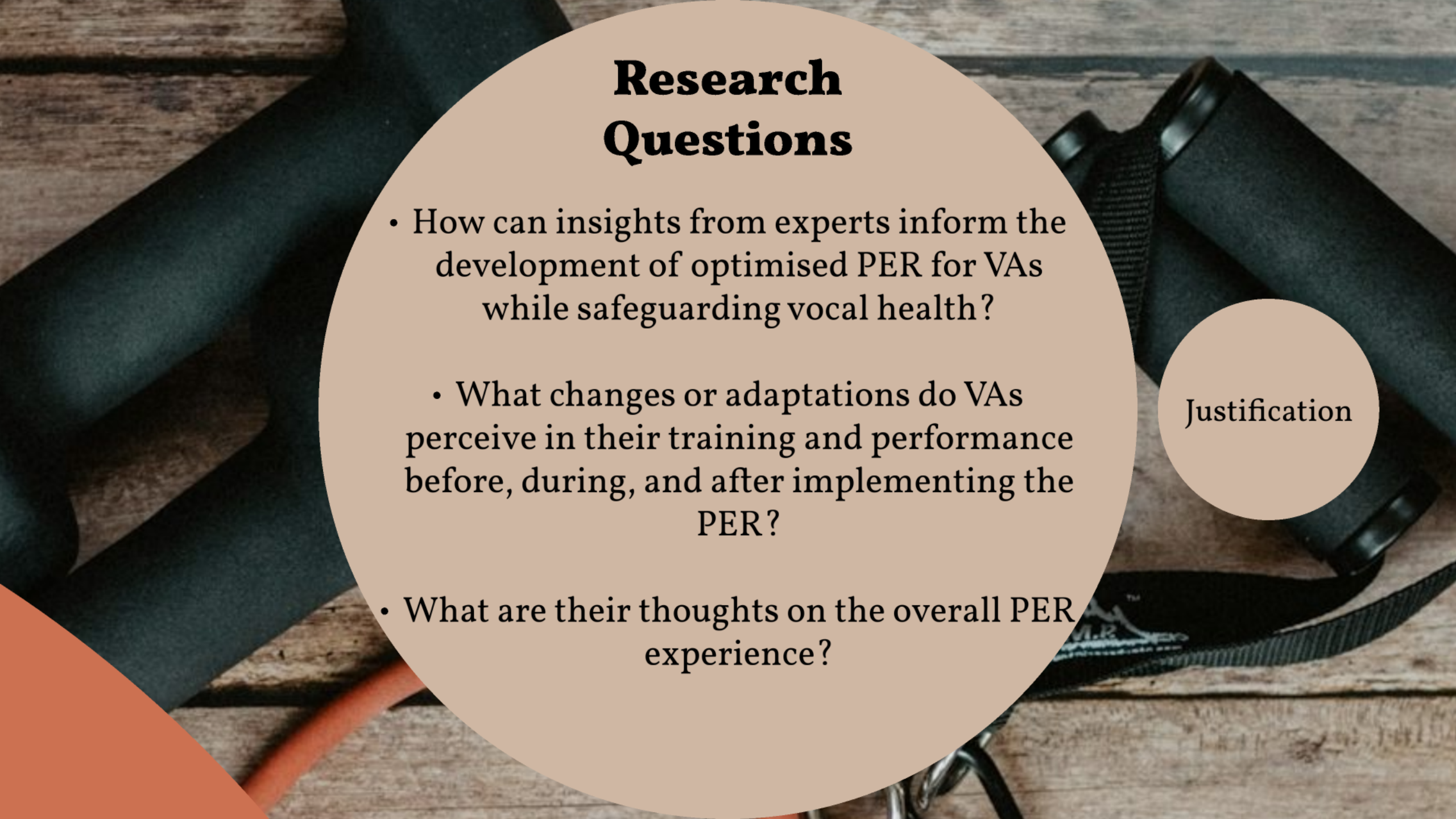
(Morton, 2020)

- Gaps

Questions

Aims and Objectives

Intentions



Research Questions

- How can insights from experts inform the development of optimised PER for VAs while safeguarding vocal health?

- What changes or adaptations do VAs perceive in their training and performance before, during, and after implementing the PER?

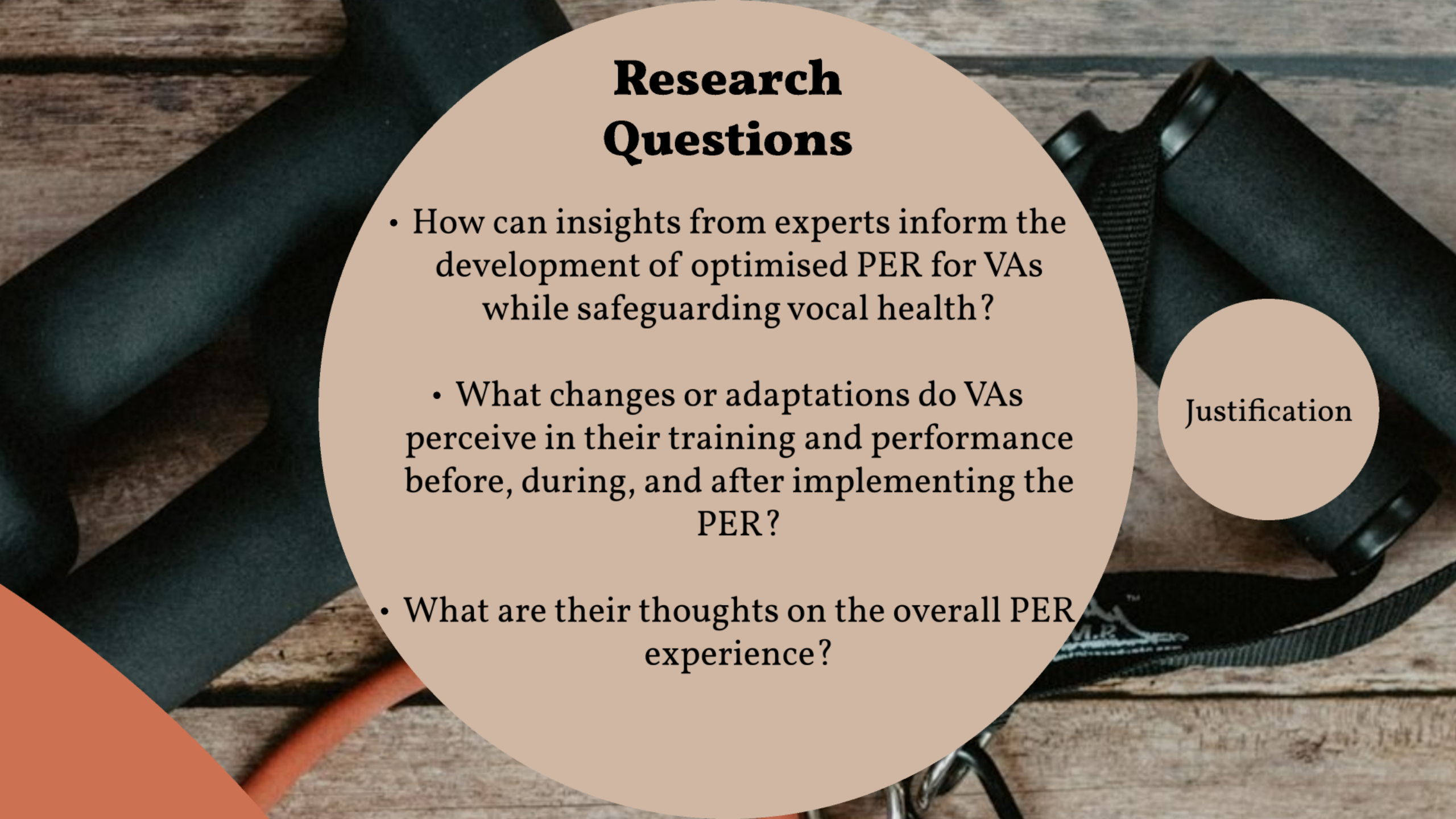
- What are their thoughts on the overall PER experience?

Justification



Justifications

- Mitigate challenges
- Compensations, lack of stamina, strain, misue or injury
- Lack of specialised programming for the demographic



Research Questions

- How can insights from experts inform the development of optimised PER for VAs while safeguarding vocal health?

- What changes or adaptations do VAs perceive in their training and performance before, during, and after implementing the PER?

- What are their thoughts on the overall PER experience?

Justification



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- Gaps

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Aims and Objectives

- Gain expert recommendations
- Customise a PER that aligned with VA demands
- Investigate effectiveness and VAs' perceptions on the PER
- Facilitate a collaborative process



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- Gaps

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Intended Impact

- Inspire VAs to reach full training and performing potential
- Tools for VAs and coaches to elevate well-being, stamina and professional longevity
- Interdisciplinary collaboration



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Methodology

- Qualitative
  (Braun & Clark, 2008)
- Subjective epistemology
- Relativistic ontology
- Constructive paradigm
  (Killam, 2013)
- Health vs non-health fields
  (Pauline et al., 2006)
- Transparency

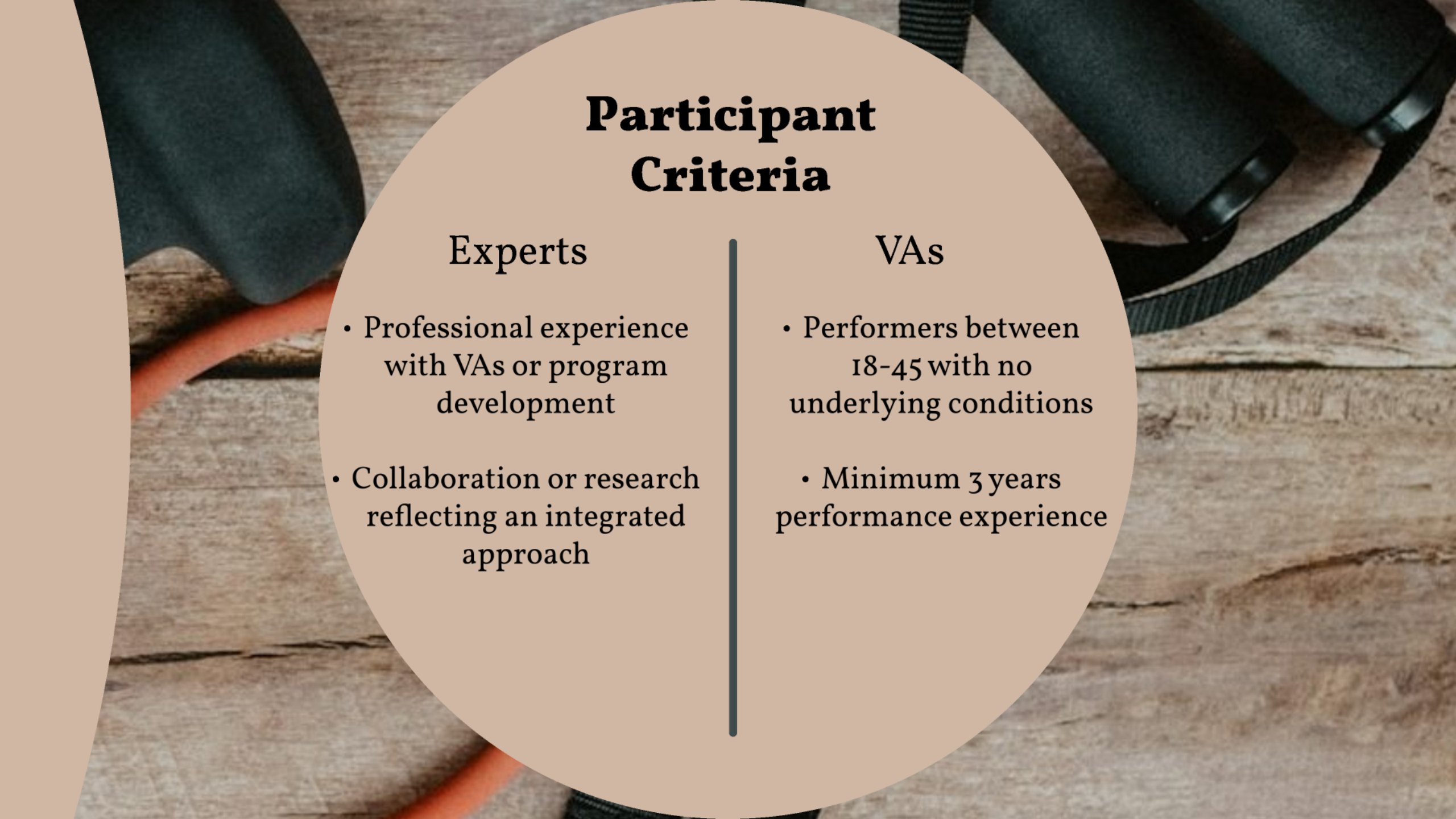
Data Collection

Ethics

Data Collection

- Narrative literature review
  (Fereday & Muir-Cochrane, 2006; Ferrari, 2015)
- Semi-structured expert interviews
  (Briggs, Coleman, & Morrison, 2012; Adams, 2015, Kyngäs, 2020)
- PER creation and implemention
  (Pauline *et al.*, 2015; Van Hoye *et al.*, 2015;)
- 3 qualitative VA surveys
  (Dearnly, 2005)
- Coding processes
  (Castleberry & Nolen, 2018; Saldanña, 2021;
- Figure development
  (Fagan et al., 2017)
- Reflection, analysis, and reporting
  (Kolb, 1984)

Criteria



Participant Criteria

Experts

- Professional experience with VAs or program development
- Collaboration or research reflecting an integrated approach

VAs

- Performers between 18-45 with no underlying conditions
- Minimum 3 years performance experience

Data Collection

- Narrative literature review
  (Fereday & Muir-Cochrane, 2006; Ferrari, 2015)
- Semi-structured expert interviews
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Data Collection

Ethics



Ethical Considerations

- Successful ethical review
- Participant criteria
  - (Haff & Triplett, 2016, Leavy, 2014)
- Participant awareness, safety, privacy and anonymity

(Field & Hole, 2013; Harris *et al.*, 2019)

- Health related information and safety concerns

(Pauline *et al.*, 2010; Warburton *et al.*, 2011)

- Certifications and scope

(Schlabach & Peer, 2024)

- Referrals
- Insider research

(Denscombe, 2003; Saldaña, 2021)



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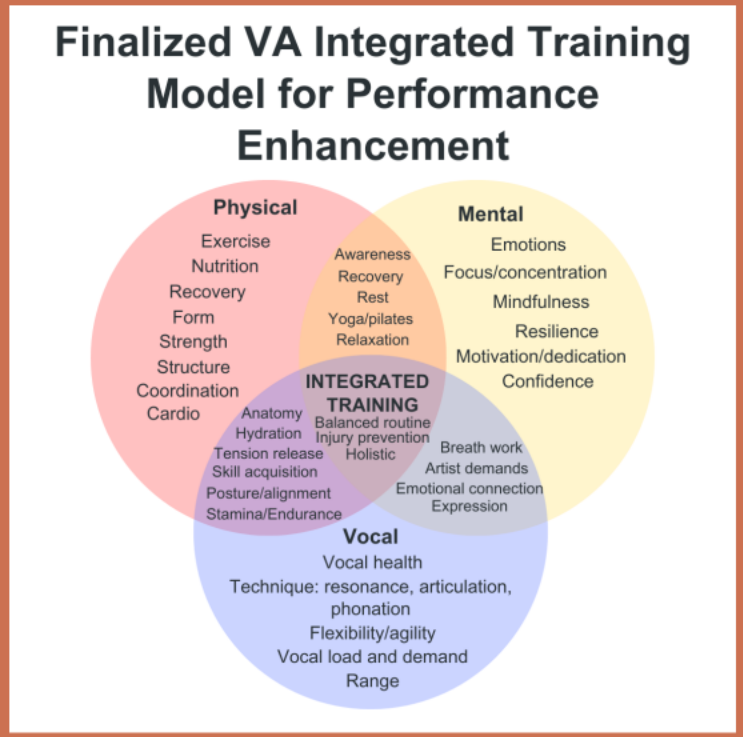
Discussion

Literature Review

Expert Interviews

Findings

Inductive and Interative



Program Creation

VA Surveys



Literature Review Findings

VAc Demands

Current training

(Morton, 2020)

VA Needs

(Nanjundeswaran *et al.*, 2017; Nesbitt, 2023)

Load vs Demand

(Orlikoff, 2008; Hunter *et al.*, 2020; Chandler, 2022)

Muscular and Biomechanical Knowledge

(Tellis *et al.*, 2004; Hoh, 2005; Plotkin *et al.*, 2021)

Stamina and Endurance

(Røksund *et al.*, 2014; Sandage & Smith, 2017)

Dynamic Structure and Alignment

(Schneider *et al.*, 1997; Lee *et al.*, 2020)

Kinesthetic Awareness

(Friedlander, 2018; Malde et al., 2020)

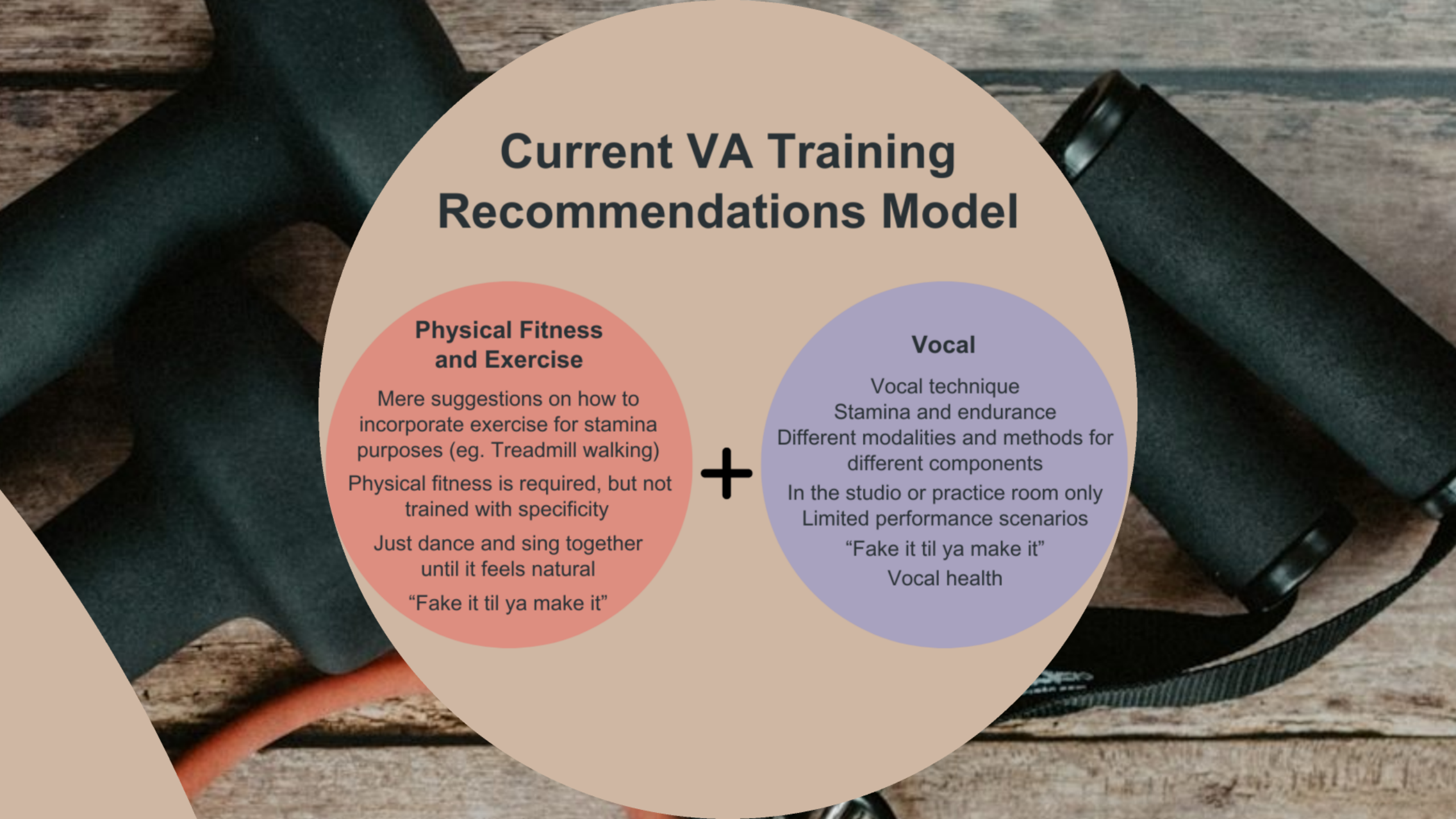
Tension

(Orlikoff, 2008; Primov-Fever *et al.*, 2014; Lee *et al.*, 2020; Snell *et al.*, 2020)

Program Requirements

Current Model

Updated Model



Current VA Training Recommendations Model

Physical Fitness and Exercise

Mere suggestions on how to incorporate exercise for stamina purposes (eg. Treadmill walking)

Physical fitness is required, but not trained with specificity

Just dance and sing together until it feels natural

"Fake it til ya make it"

+

Vocal

Vocal technique
Stamina and endurance
Different modalities and methods for different components

In the studio or practice room only
Limited performance scenarios

"Fake it til ya make it"

Vocal health



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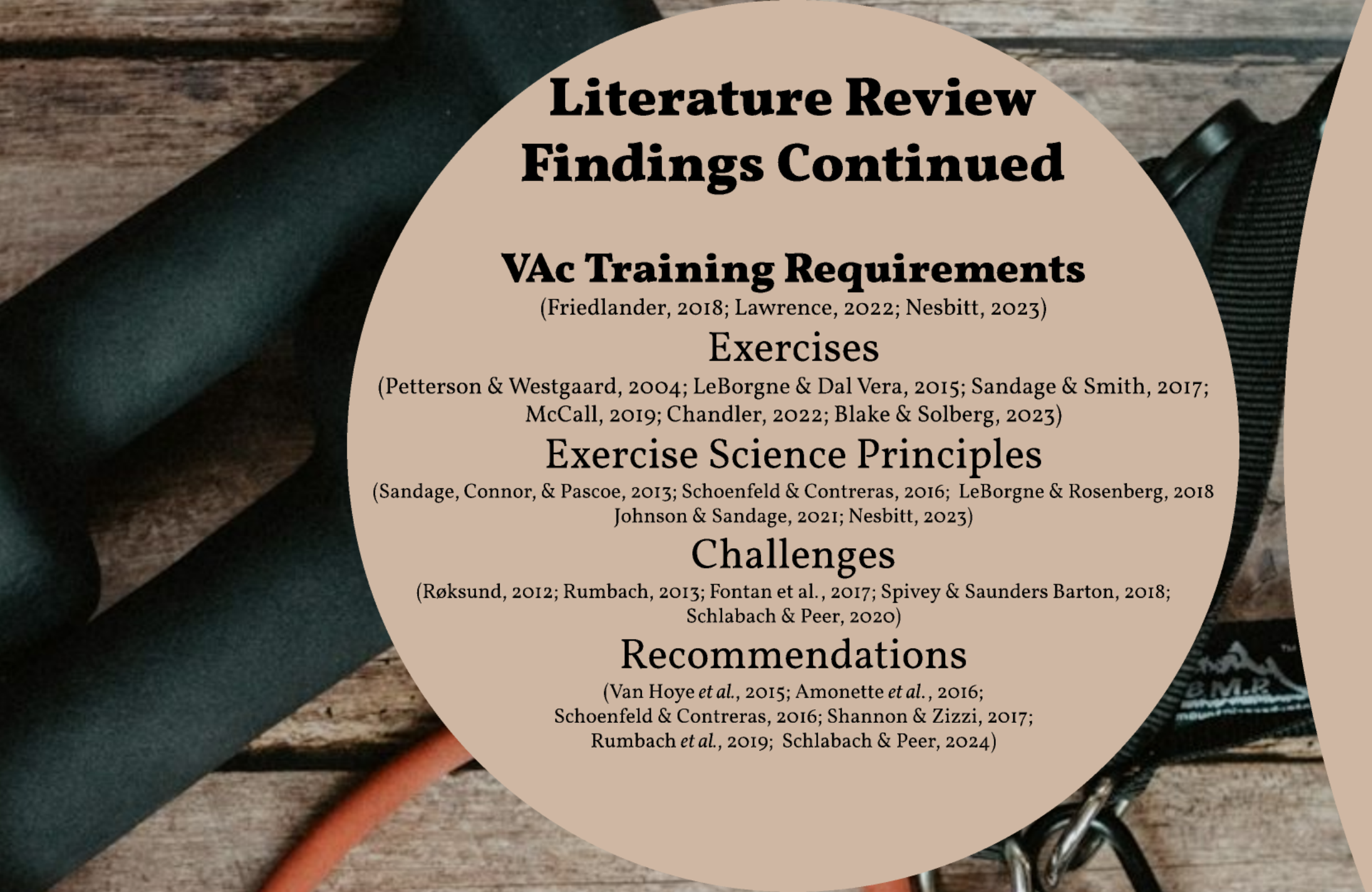
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(Orlikoff, 2008; Primov-Fever *et al.*, 2014; Lee *et al.*, 2020; Snell *et al.*, 2020)

Program Requirements

Current Model

Updated Model



Literature Review Findings Continued

VAc Training Requirements

(Friedlander, 2018; Lawrence, 2022; Nesbitt, 2023)

Exercises

(Petterson & Westgaard, 2004; LeBorgne & Dal Vera, 2015; Sandage & Smith, 2017; McCall, 2019; Chandler, 2022; Blake & Solberg, 2023)

Exercise Science Principles

(Sandage, Connor, & Pascoe, 2013; Schoenfeld & Contreras, 2016; LeBorgne & Rosenberg, 2018 Johnson & Sandage, 2021; Nesbitt, 2023)

Challenges

(Røksund, 2012; Rumbach, 2013; Fontan et al., 2017; Spivey & Saunders Barton, 2018; Schlabach & Peer, 2020)

Recommendations

(Van Hoye *et al.*, 2015; Amonette *et al.*, 2016; Schoenfeld & Contreras, 2016; Shannon & Zizzi, 2017; Rumbach *et al.*, 2019; Schlabach & Peer, 2024)



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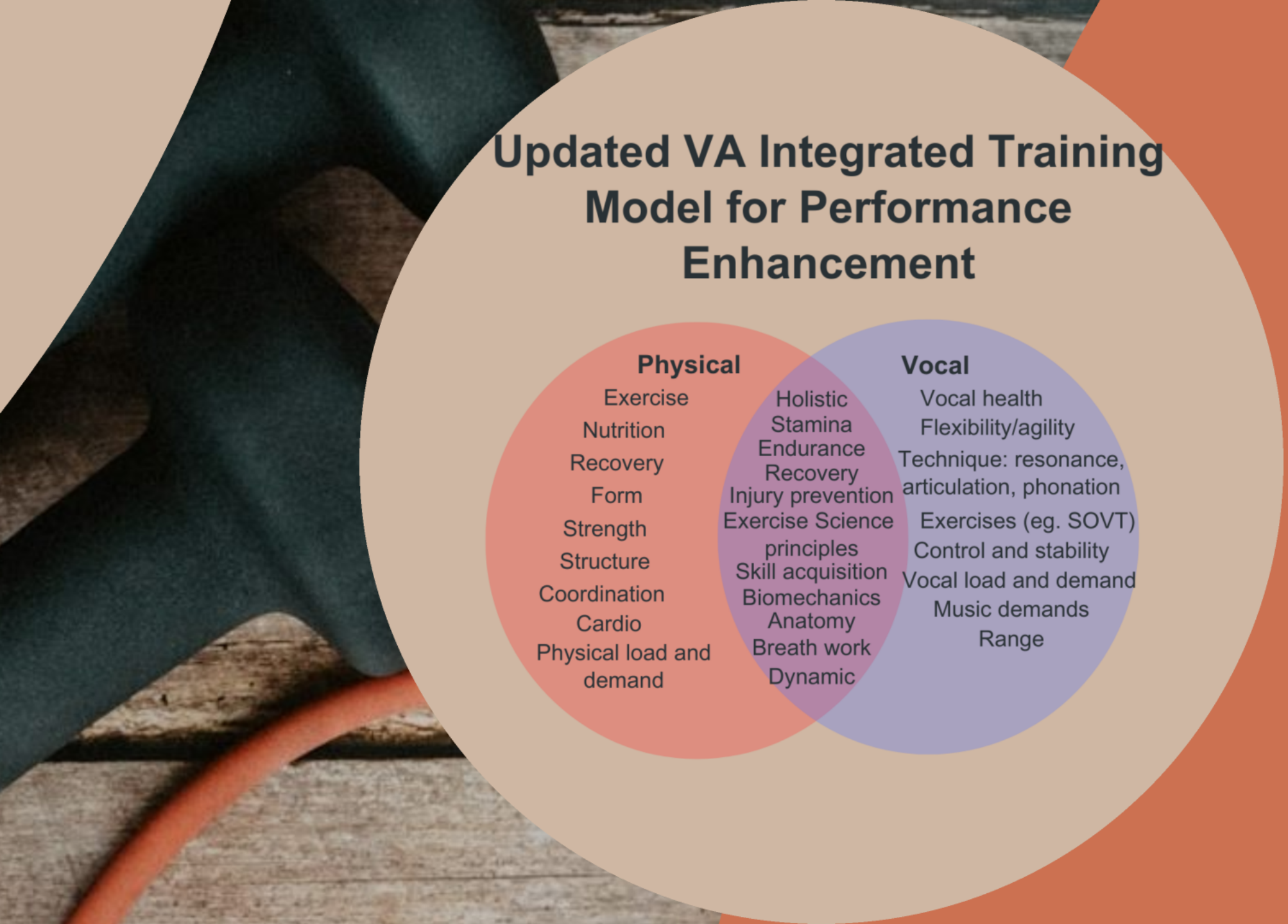
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(Orlikoff, 2008; Primov-Fever *et al.*, 2014; Lee *et al.*, 2020; Snell *et al.*, 2020)

Program Requirements

Current Model

Updated Model



Updated VA Integrated Training Model for Performance Enhancement



Literature Review Findings

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Program Requirements

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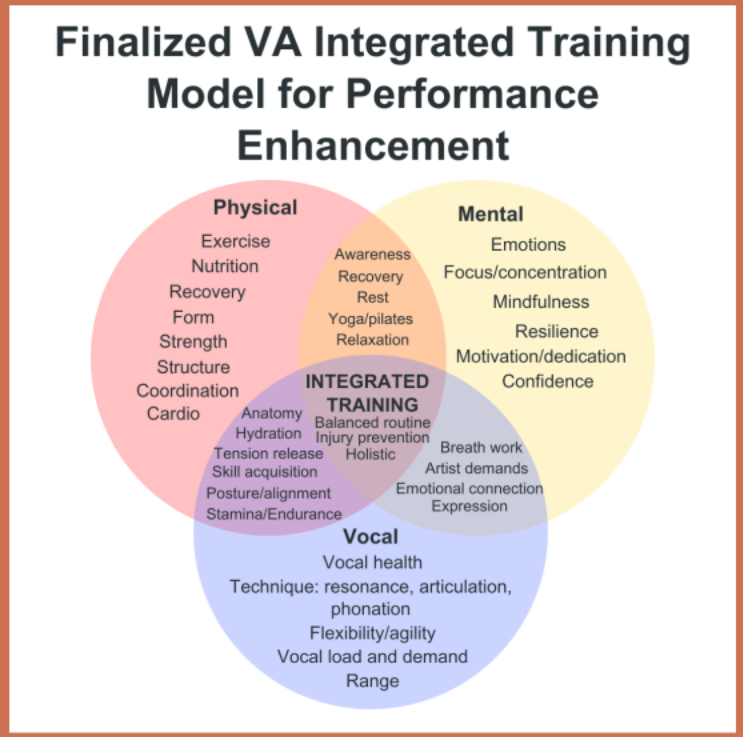
Updated Model

Literature Review

Expert Interviews

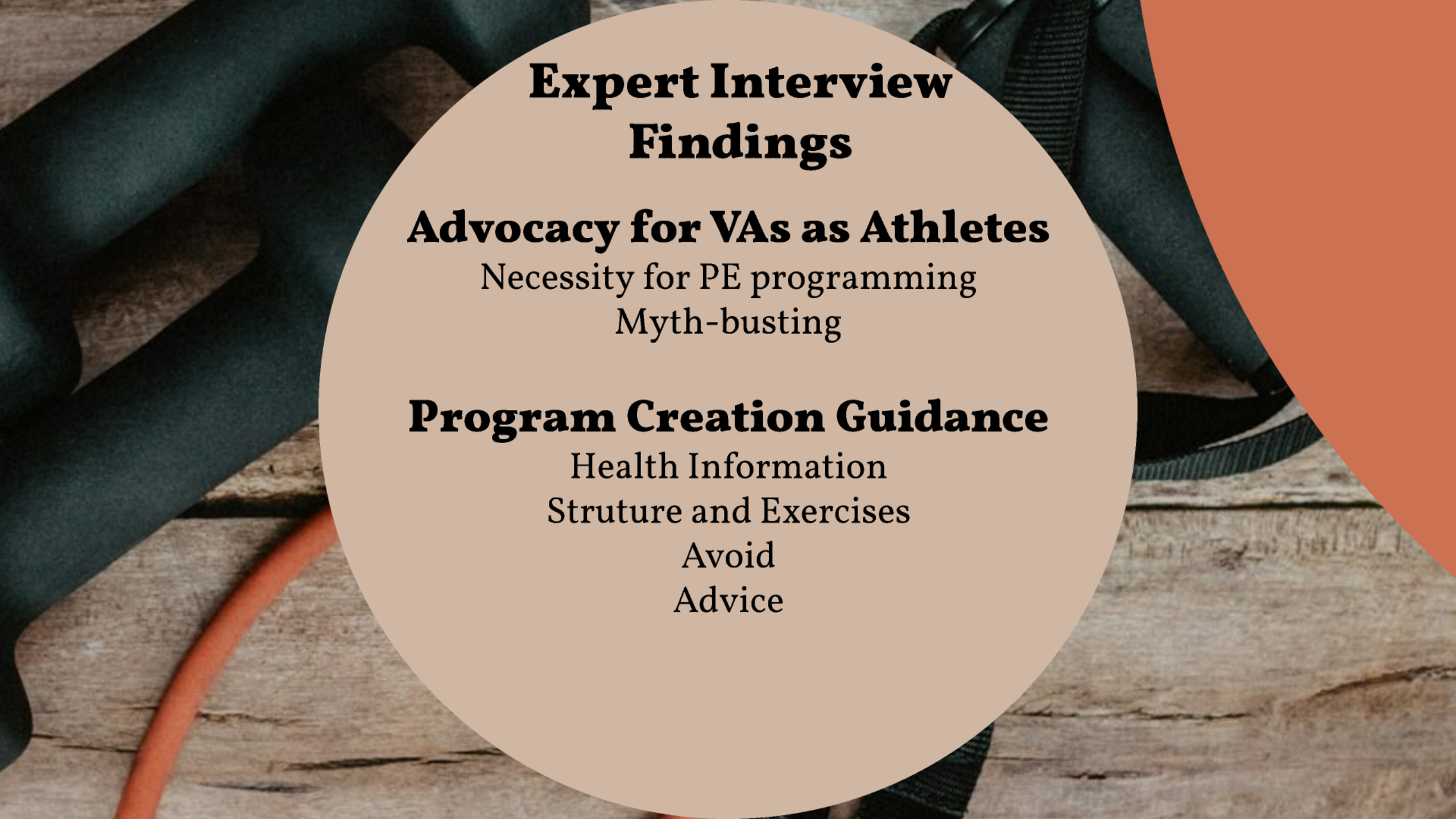
Findings

Inductive and Interative



Program Creation

VA Surveys



Expert Interview Findings

Advocacy for VAs as Athletes

Necessity for PE programming

Myth-busting

Program Creation Guidance

Health Information

Struture and Exercises

Avoid

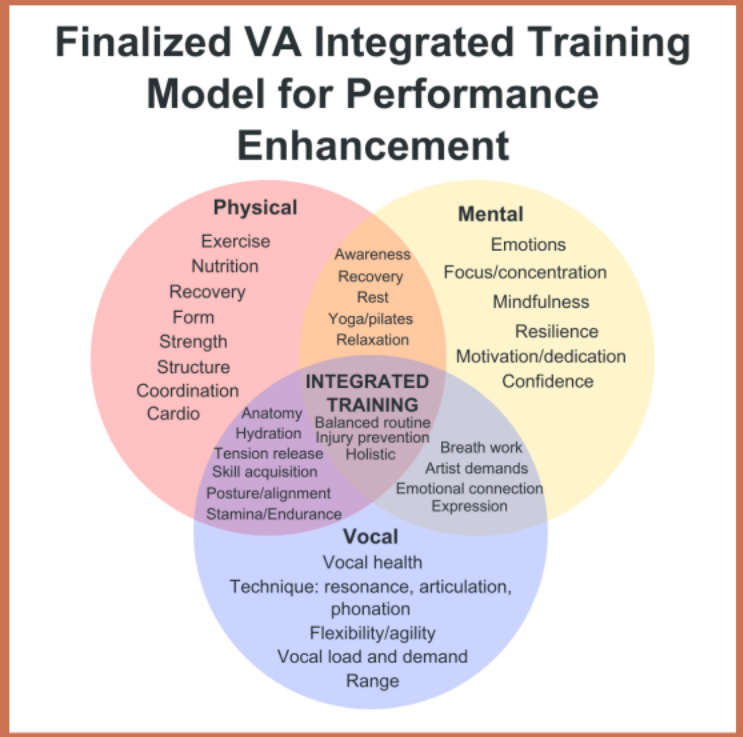
Advice

Literature Review

Expert Interviews

Findings

Inductive and Interative



Program Creation

VA Surveys

Program Creation Flow Chart



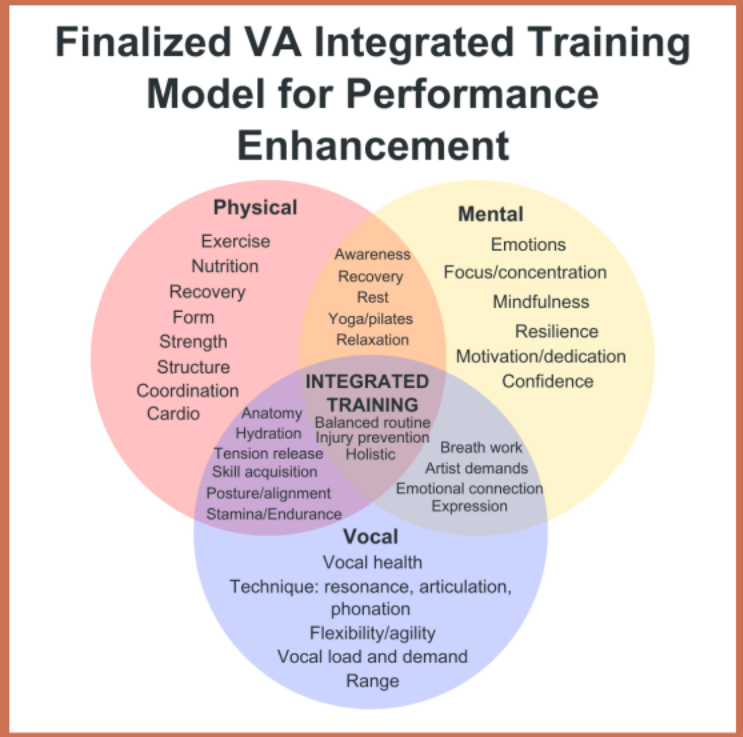
- Tension Stimulating and Tension Relieving Days
- Warm- up
- Balance and Mobility
- Pre- Breathing Exercises
- Strength and Resistance
- Core Development
- Cardio
- Cool-Down

Literature Review

Expert Interviews

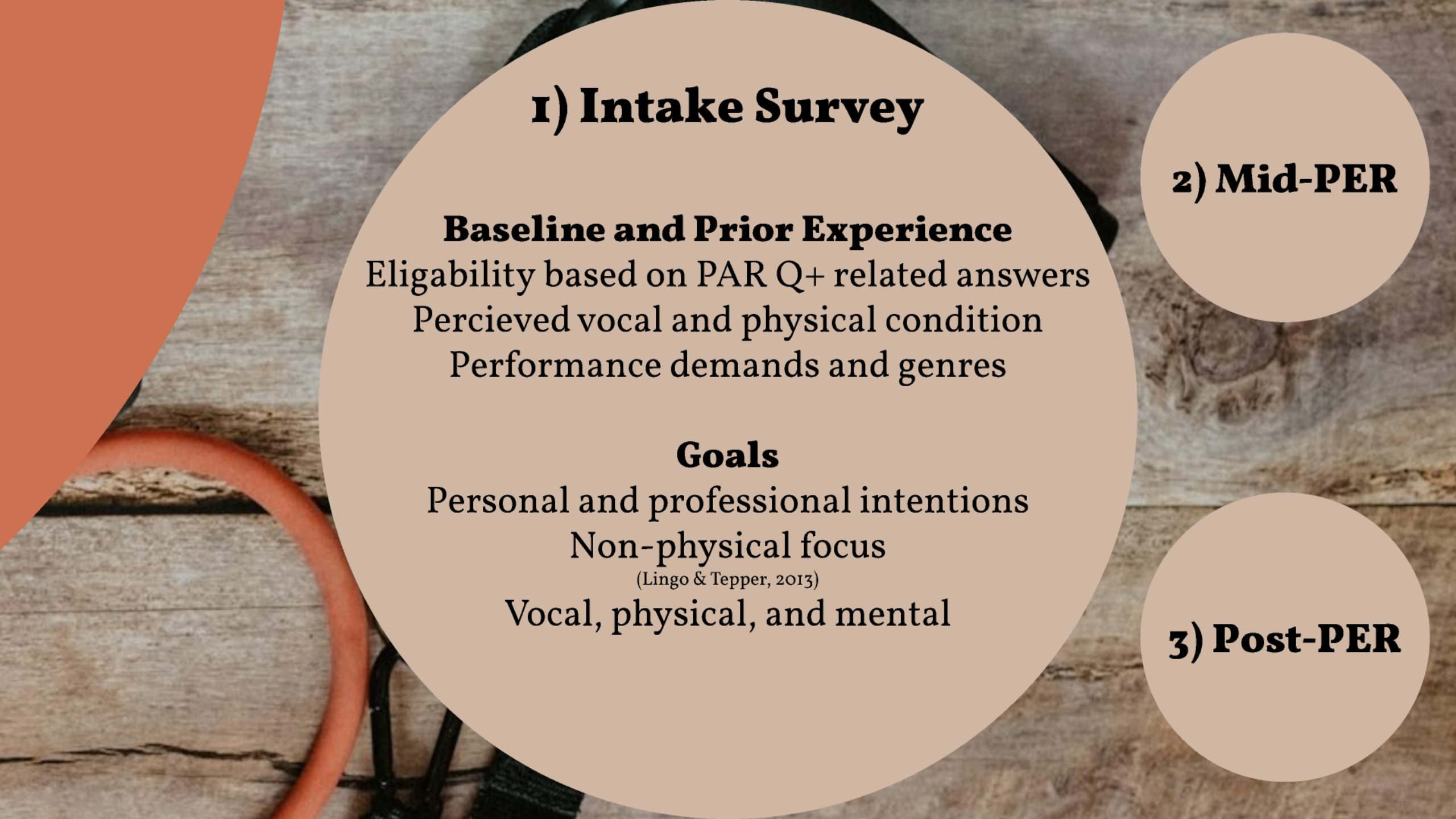
Findings

Inductive and Interative



Program Creation

VA Surveys



1) Intake Survey

Baseline and Prior Experience

Eligability based on PAR Q+ related answers

Percieved vocal and physical condition

Performance demands and genres

Goals

Personal and professional intentions

Non-physical focus

(Lingo & Tepper, 2013)

Vocal, physical, and mental

2) Mid-PER

3) Post-PER

2) Mid-PER Findings

Vocal Experience

Sustainability of breath, breath control and stamina, new breath sensation and awareness, flexibility, projection, energy to sustain phrases, vocal confidence, range freedom

Physical Experience

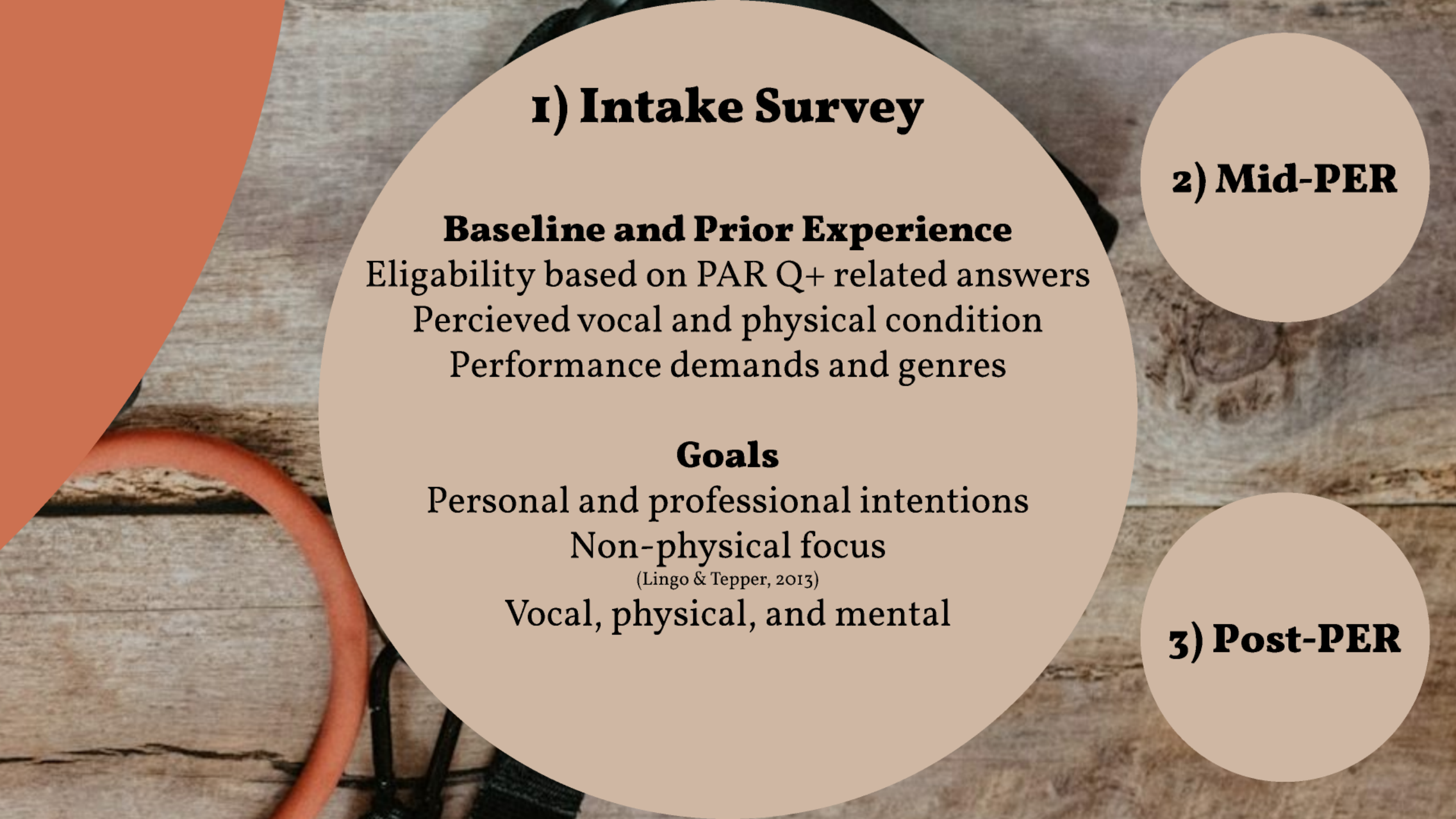
Engagement, confidence, grounded in body and form, energized,
Increased activation, engagement, adn stability of key muscles
Increased physical stamina with less shortness of breath and less energy drain
Progressive overload and upregulation

Mental Experience

Energized, confidence and comfort
Sense of accomplishment and progress
Mental clarity

Challenges

Adhereance and demands
Exercise form confusion
Soreness



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Vocal, physical, and mental

2) Mid-PER

3) Post-PER

3) Post-PER Findings

Vocal Outcomes

Increased vocal health
Breath control via dynamic breathing and core strength
Wider range and flexibility with consistent tone quality
Overall stamina and structure stability

Physial Outcomes

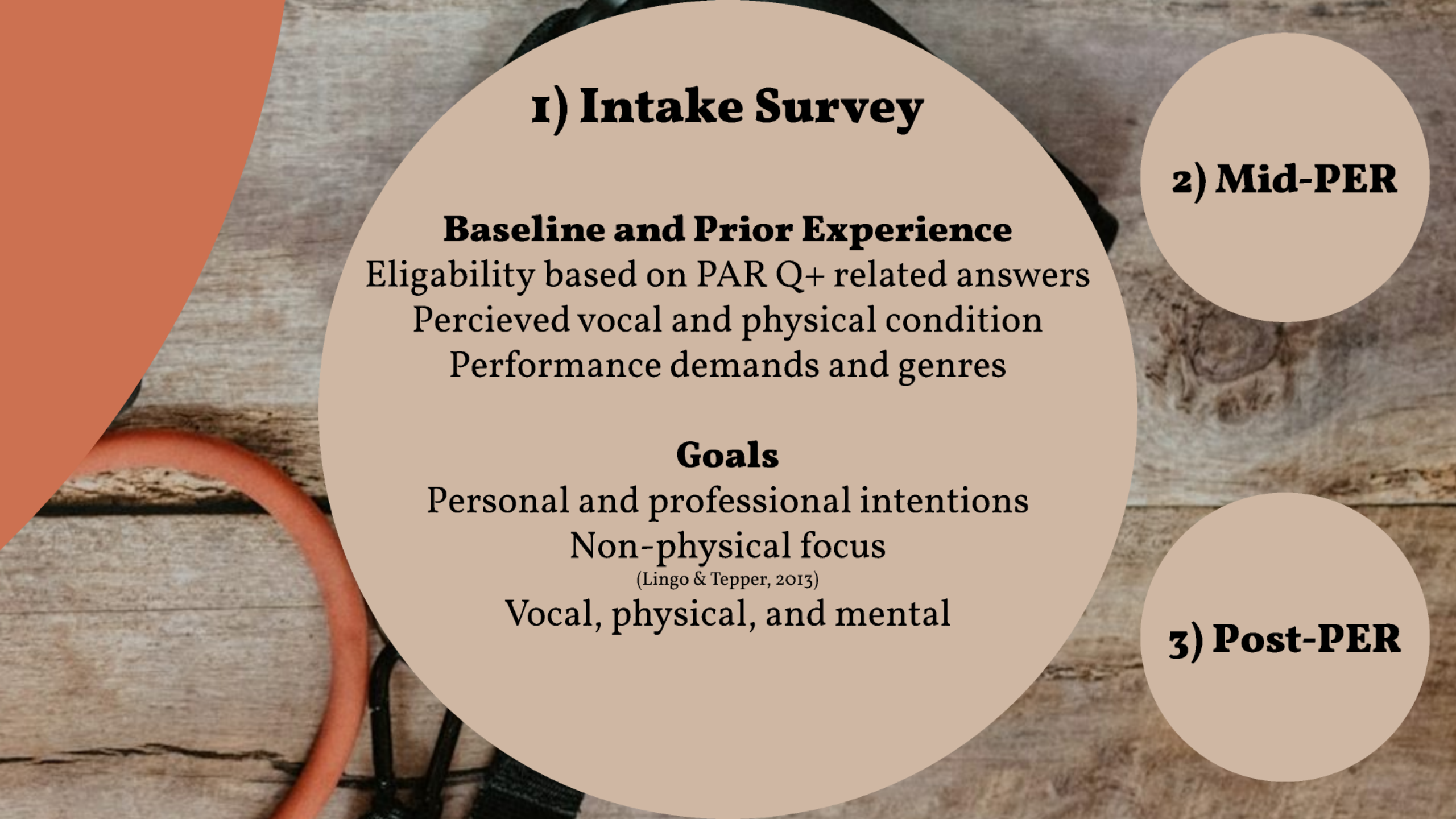
Increased muscle tone, core strength and better posture
Greater control
Skill aquisition
Flexibility
Decreased rigidity, soreness, and tension

Mental Outcomes

Sense of accomplishment, confidence, progress and comfort
Consistency, resislience, and commitment

Advice and Sentiments

Accessibility, community, form library,
evidence-based learning opportunites



1) Intake Survey

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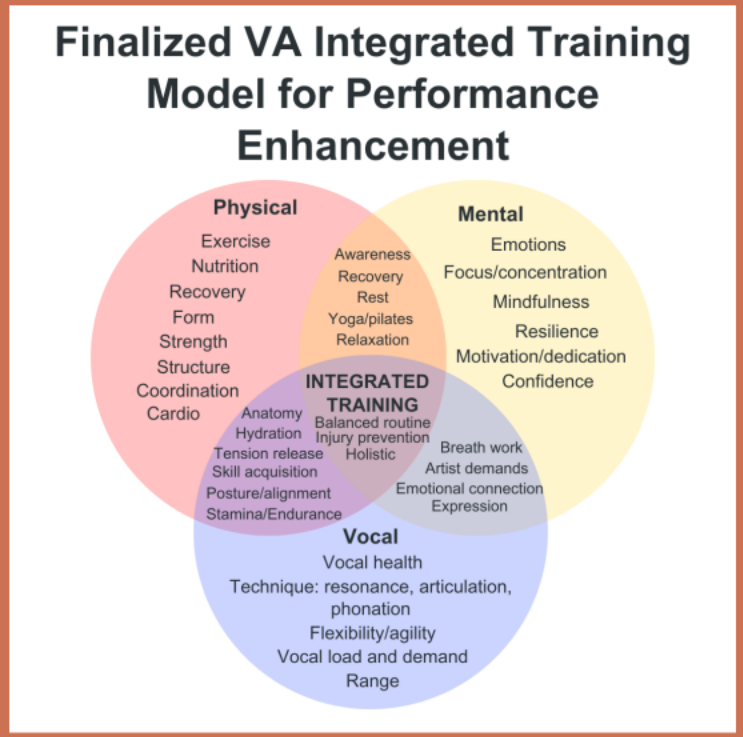
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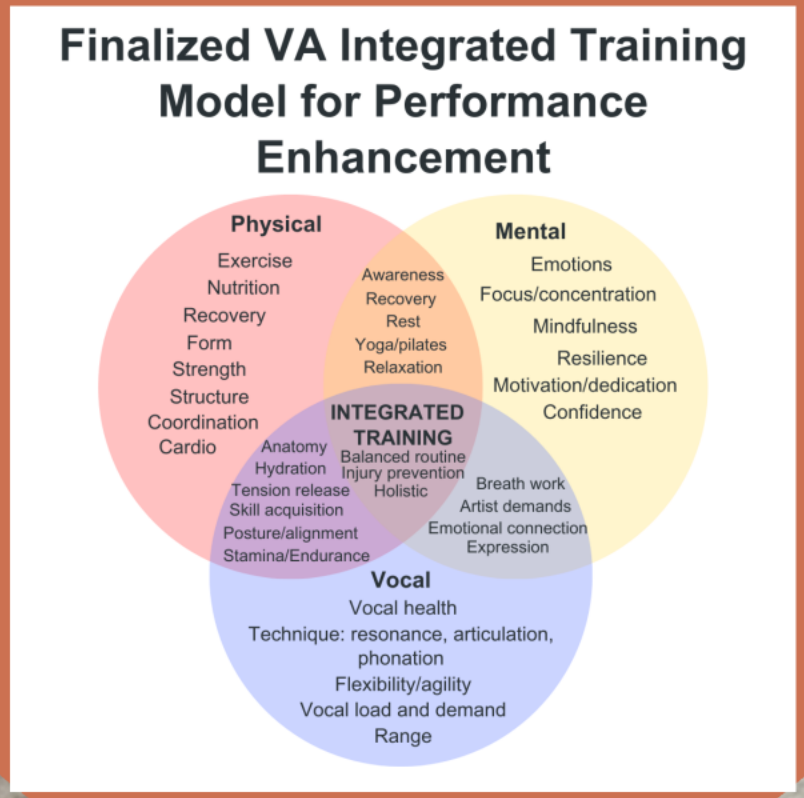
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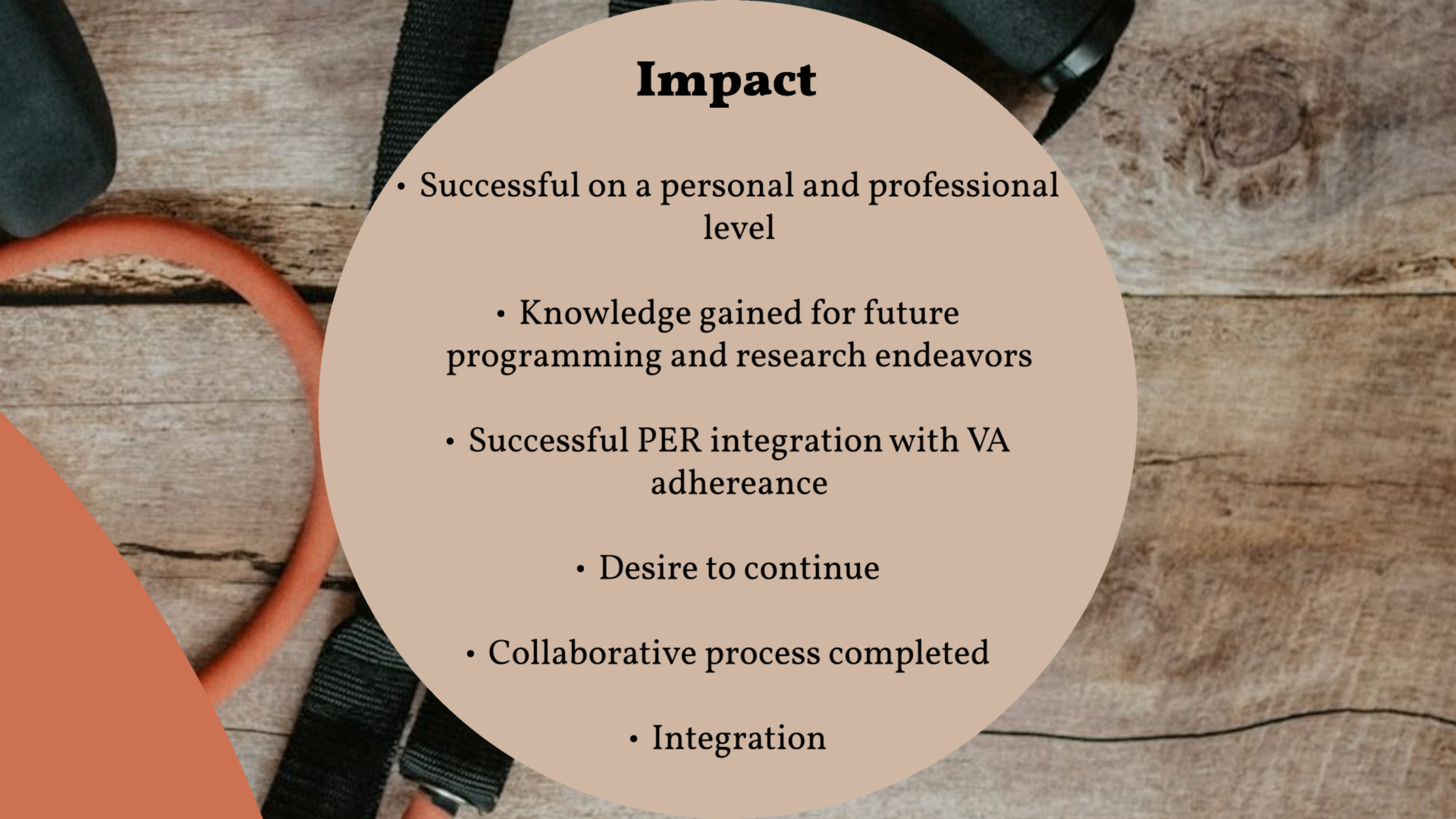
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Impact

Limitations

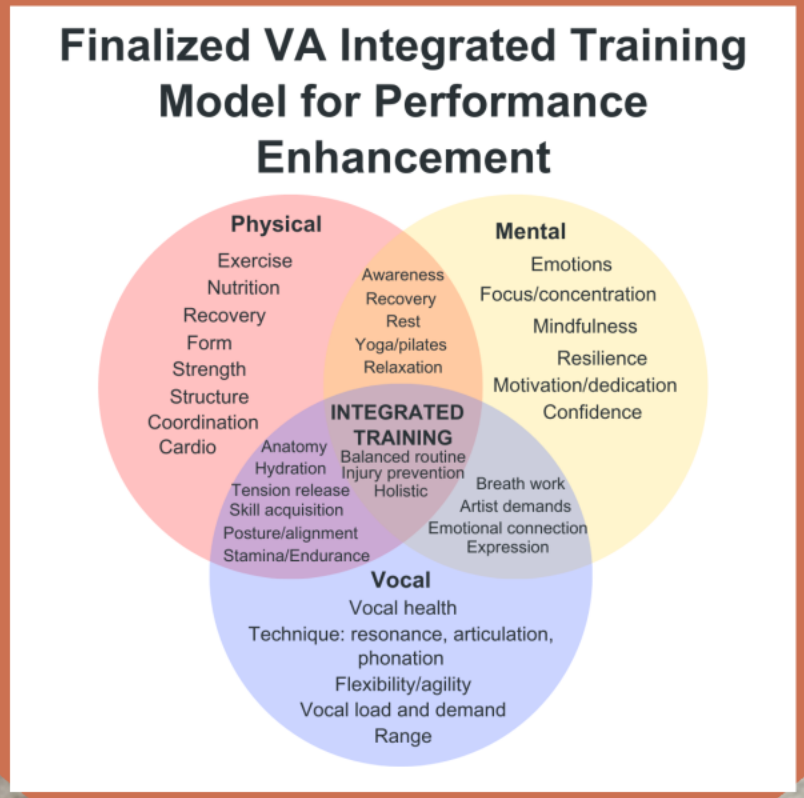
Recommendations



Impact

- Successful on a personal and professional level
- Knowledge gained for future programming and research endeavors
- Successful PER integration with VA adhereance
- Desire to continue
- Collaborative process completed
- Integration

Discussion



Impact

Limitations

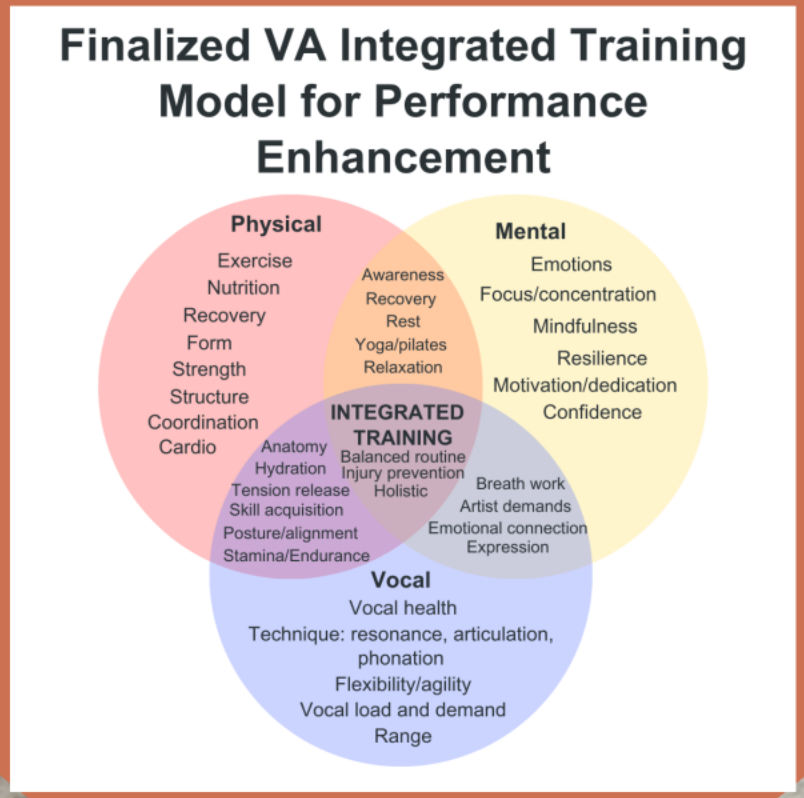
Recommendations



Limitations

- Previous work with VA participants
- Confirmation bias
  (Roulston & Shelton, 2015)
- No control group
  (Maxwell, 2008)
- No wide-spread programming available
- Short time period
- Short implementation period
- Physical fitness variablity
- Reliance on self-reported data
  (Almeida et al., 2021)

Discussion



Impact

Limitations

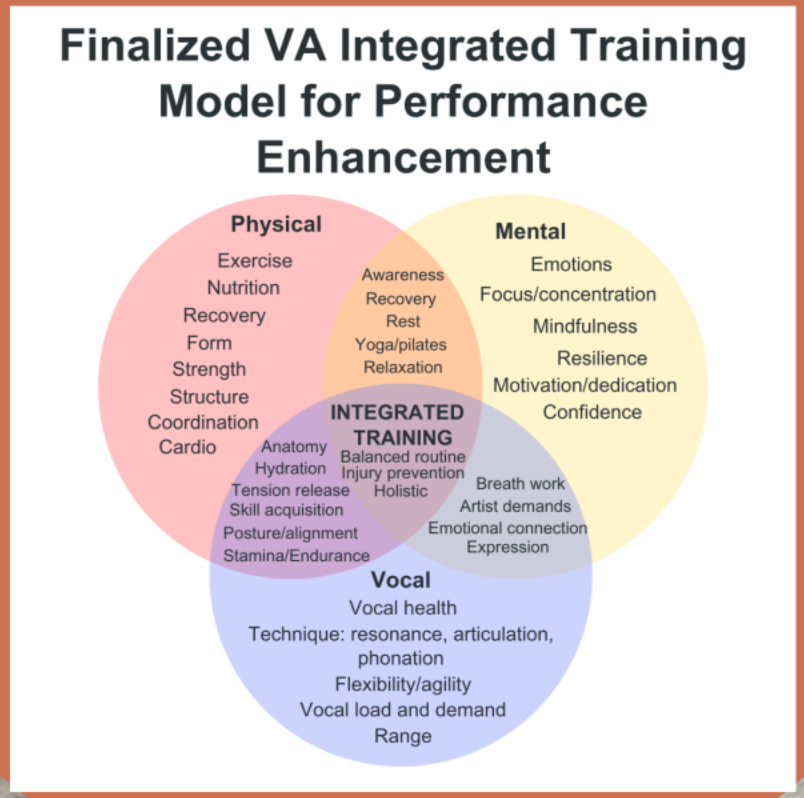
Recommendations



Recommendations

- Laryngeal view during exercise research
  (Naito & Niimi, 2000; Orlikoff, 2008; Røksund, 2012; Sandage & Smith, 2017)
- Genre-specific training
  (Spivey, 2018; Chandler, 2022)
- Customizable, scalable, and accessible programming for VAs
  (Cranton, 2006; Kirkpatrick & Kirkpatrick, 2016)
- Trainings for coaches
- Longer research timeline
- Gender specific
- Ability

Discussion



Impact

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Integrated Practice: Expert-Informed Physical Exercise Regimens to Enhance Vocal Athlete Performance

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Module 6 - BMPF7010 Presentation
9 September 2024

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Introduction

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