

Understanding Injury Prevention Knowledge, Attitudes, and Beliefs Among US Marines in Secondary Training Settings

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Disclosure Information

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Learning Objectives

1

Describe Marines' knowledge, attitudes, and beliefs (KABs) about lower extremity musculoskeletal injury (LE MSK-I) and prevention interventions.

2

Identify differences in KABs between enlisted Marines and Marine officers in secondary training environments.

3

Consider how to integrate prevention strategies by balancing self-efficacy, cultural pressures, and mission readiness.

Introduction



Successful **musculoskeletal injury (MSK-I) prevention programs** require end-user buy-in.



End-user perspectives on MSK-I and MSK-I prevention can positively, but also negatively, affect program uptake and adherence.



Incorporating end-user perspectives into program design can help ensure they are **feasible, contextually relevant, and acceptable**.

Purpose

Examine



KNOWLEDGE



ATTITUDES



BELIEFS

**regarding lower extremity (LE) MSK-I prevention programs among
enlisted and officer U.S. Marines in training.**

Methods

Cross-sectional, secondary analysis of baseline data from Marines enrolled in 2 larger prospective studies assessing factors associated with MSK-I

Total Sample: N=2,033 Marines

Enlisted: n=469

 Male enlisted Marines from RITE-TRACC study (2016-2019)

 Infantry Training Battalion or Marine Combat Training School of Infantry-West (SOI-W)
Marine Corps Base Camp Pendleton, CA

 **Age: 19.8 ± 1.7 yrs**

Officers: n=1,564

 Male (88%) & Female (12%) Marine officers from IMPACT study (2017-2019)

 Basic Officer Course (BOC)
The Basic School
Marine Corps Base Quantico, Quantico, VA

 **Age: 24.8 ± 2.9 yrs**

Methods

Questionnaire:

- 18-items assessing LE MSK-I prevention KAB
- Adapted from Finch et al. *Br J Sports Med*, 2013
- **Rating Scale:** 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree)



Photo courtesy of Carolyn Dartt.

Example items

- “Lower extremity injuries that occur during military training are unavoidable.”
- “I am confident I know appropriate exercises and training methods to reduce my risk of lower extremity injury.”
- “I feel that military commanders should schedule time to perform specific training and exercises to prevent lower extremity injury.”
- “I feel I might be pressured to continue military training even when I am injured.”

Methods

Statistical Analysis

Exploratory Factor Analysis

Iterative analyses conducted in individual and combined officer and enlisted cohorts.

Latent KAB Constructs

Identified key KABs dimensions through factor loading.

Item Retention

Items retained based on robust factor loading and theoretical relevance to the study.

Comparative Analysis

Composite factor scores compared between enlisted and officer Marines using Mann-Whitney U tests.

Results

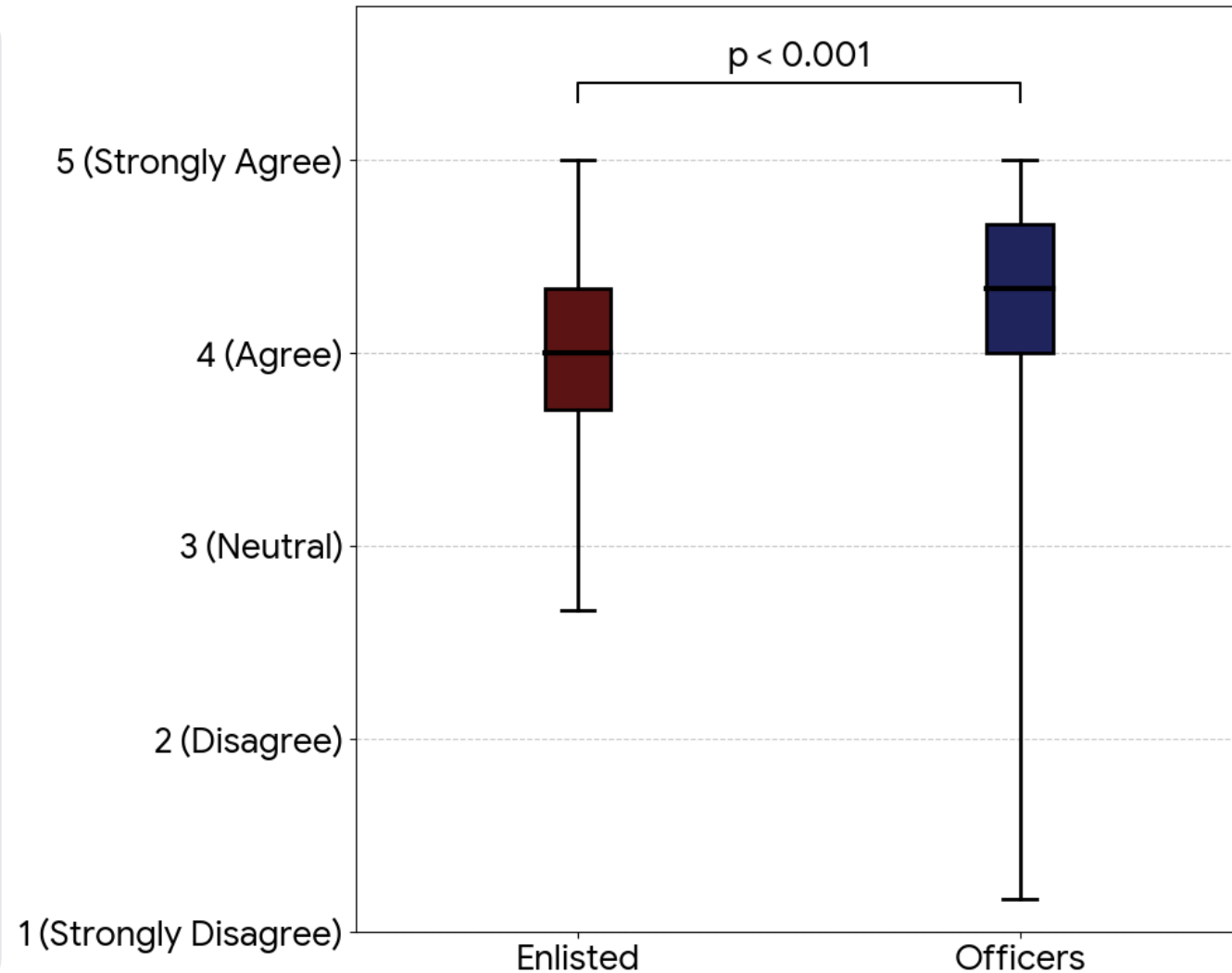
Factor 1: Injury Prevention Willingness and Self-Efficacy

Characterized Marines' receptivity to performing prevention exercises.

Survey Items

- "I feel that military commanders should schedule time to perform specific training and exercises to prevent lower extremity injury."
- "I would be willing to perform specific training and exercises during military training to increase my physical performance."
- "I would like specific training and exercises designed to prevent lower extremity injury to be a required part of my physical training while at [training site]."
- "If given instruction and guidance by my [leadership], I would be able to perform lower extremity injury prevention exercises effectively."
- "I would be willing to perform specific training and exercises to prevent lower extremity injury in my own spare time if I was provided instructional resources and guidance."
- "Lower extremity injuries can be prevented by doing specific training and exercises."

Greater agreement in officers vs. enlisted



Results

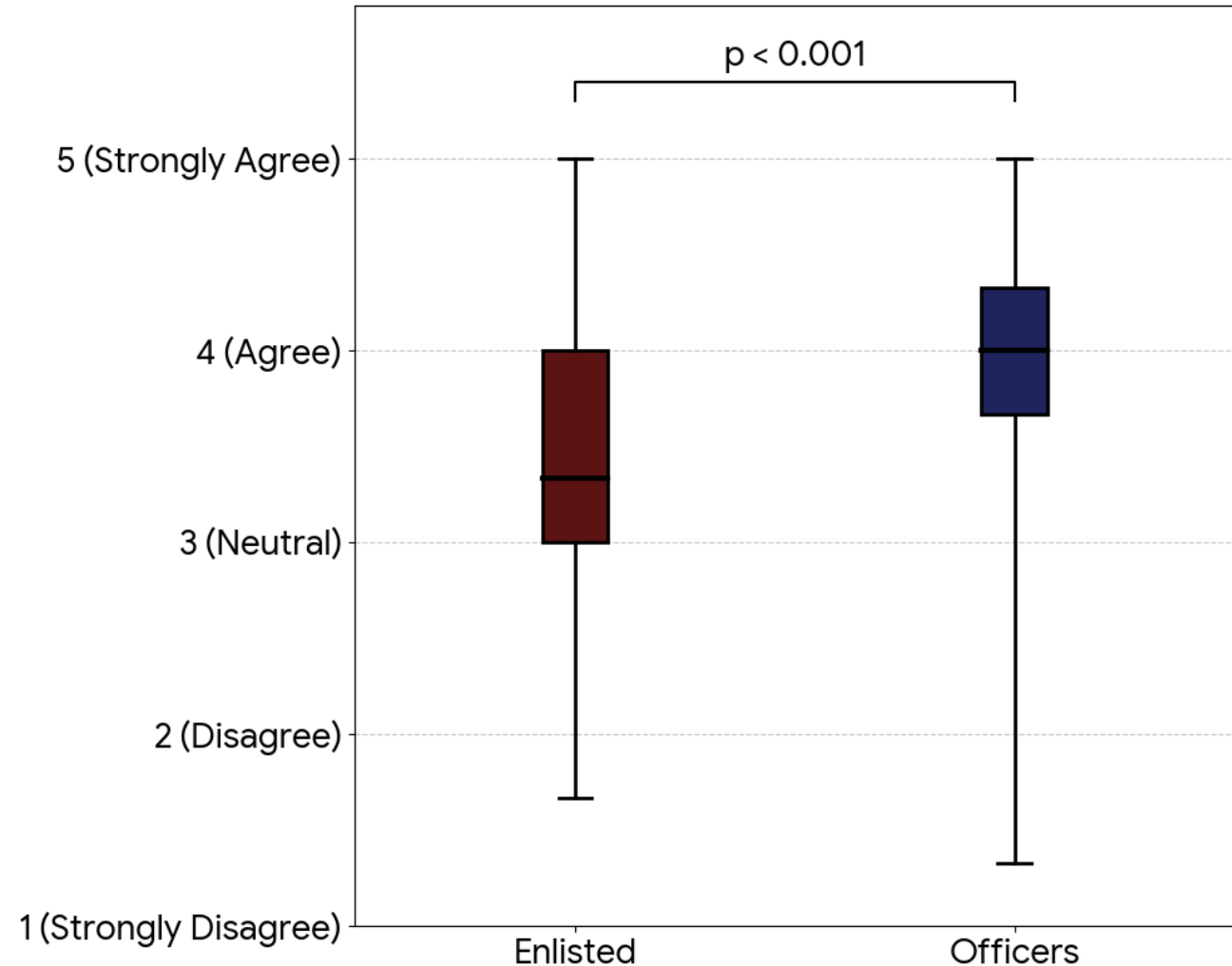
Factor 2: MSK-I Risk Normalization

Belief that LE MSK-I are unavoidable; pressure to train while injured.

Survey Items

- “Marines who continue to take part in military training with lower extremity injuries are likely to suffer physical problems later in life.”
- “I feel I might be pressured to continue military training even if I am injured.”
- “Military training exercises have a high risk of lower extremity injury.”

Greater agreement in officers vs. enlisted



Results

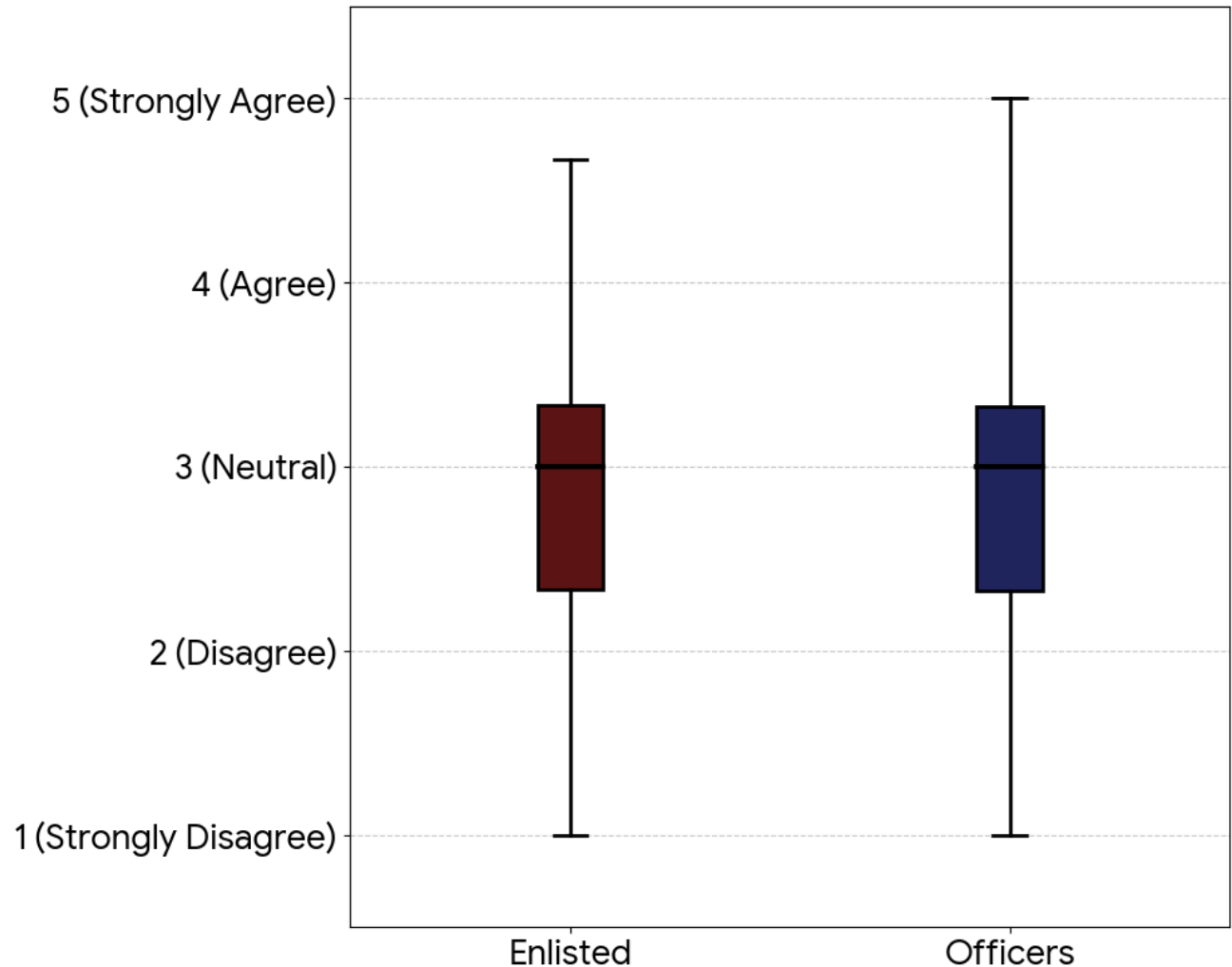
Factor 3: Prioritization of Training over MSK-I

Training requirements often supersede LE MSK-I prevention and recovery

Survey Items

- “Military training should focus more on physical performance and combat readiness than preventing injury.”
- “I do not need to be fully recovered from lower extremity injury before I return to military training.”
- “I would stop military training and sports participation if I suffered a lower extremity injury.”

Scores were neutral in both groups



Discussion

Factor 1: Injury Prevention Willingness and Self-efficacy

- 
- High MSK-I prevention program receptivity overall
 - This is great! Receptivity can facilitate buy-in
 - Officers' greater agreement may reflect greater health literacy and/or education

Factor 2: MSK-I Risk Normalization

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- MSK-I perceived as inevitable - not all are!
 - Pressure to train may conflict with MSKI management best practices
 - Officers as future leaders can change or perpetuate culture

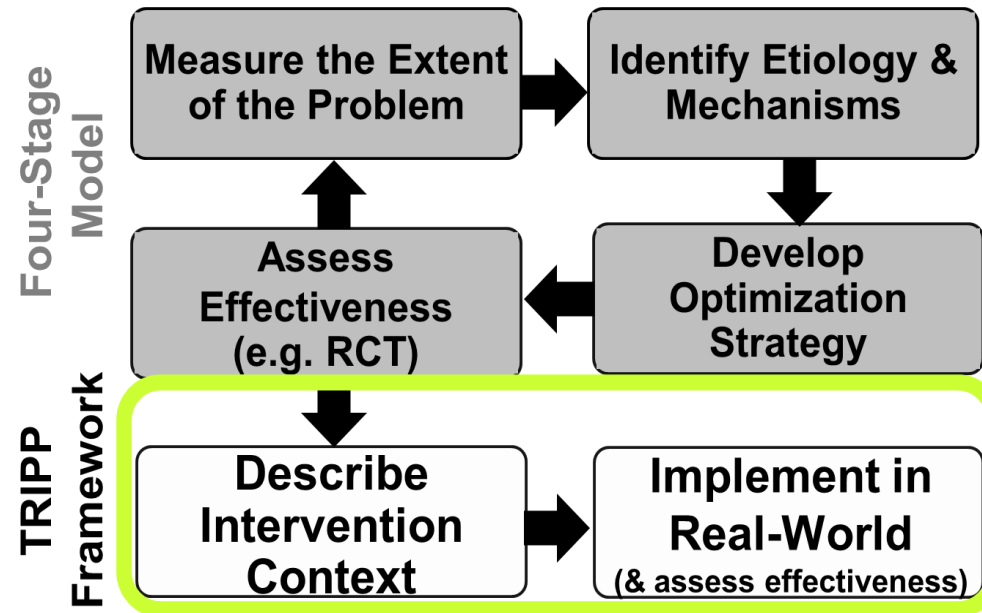
Factor 3: Prioritization of Training over MSK-I

- Both groups neutral
- Opportunity to shift KABs towards importance of prevention, enhance buy-in



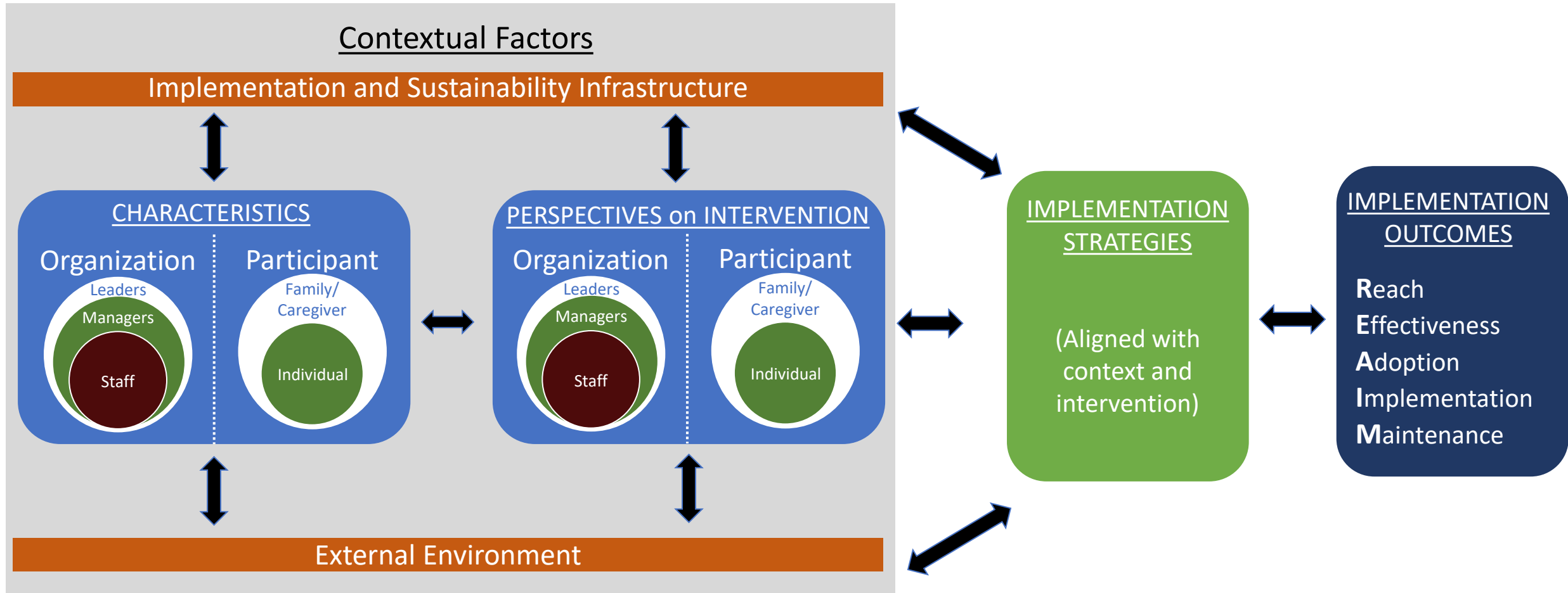
How Can We Use This Information?

Translating Research into Injury Prevention Practice (TRIPP) Framework



Discussion

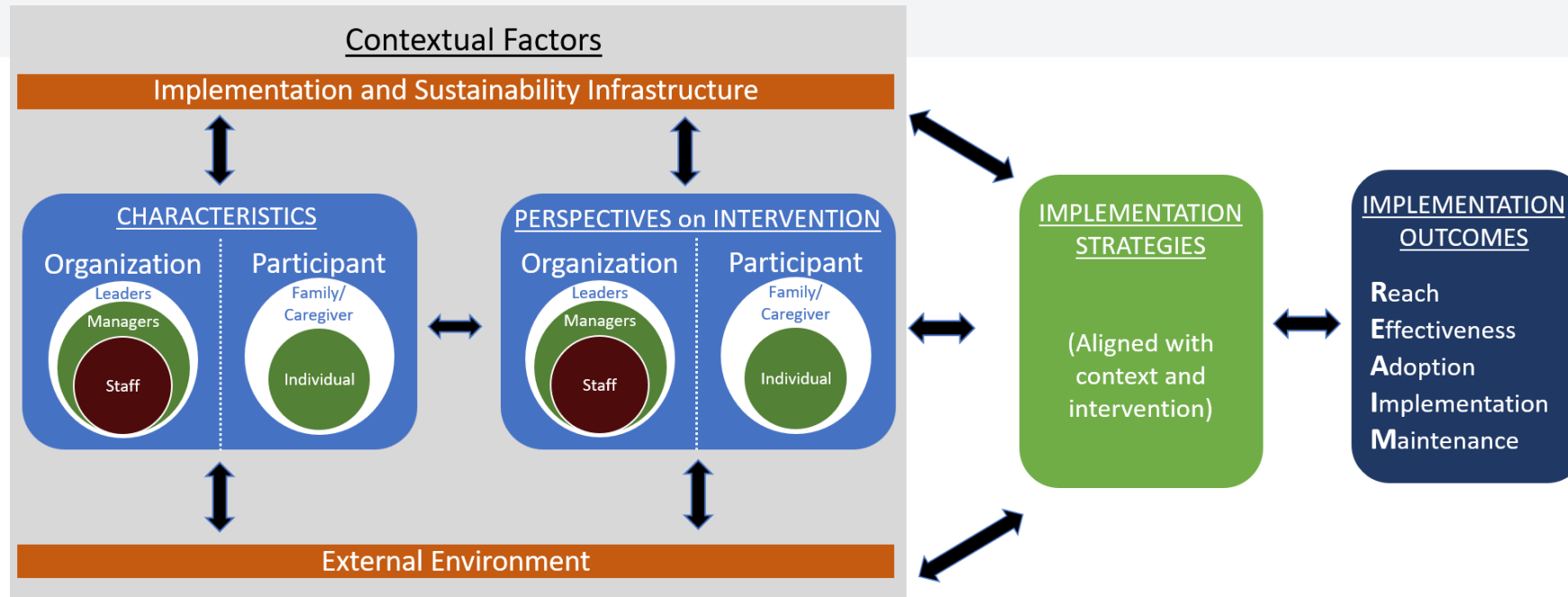
PRISM



Discussion

Future MSK-I prevention programs should:

- Leverage high receptivity and self-efficacy to improve buy-in
- Consider co-design and stakeholder implementation planning to help drive cultural change



Thank You!

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