

# Reported Pain at Work Is a Risk Factor for Vascular Surgery Trainee Burnout

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The SECOND Trial  
Surgical Education Culture Optimization through targeted interventions based on National Comparative Data (SECOND) Trial

## Background

Reported musculoskeletal pain is especially prevalent among vascular surgeons and a risk factor for burnout and attrition. Ergonomic habits start while in training and understanding work-related pain needs to be addressed.

## Objectives

To evaluate whether pain resulting from operative procedures is associated with vascular trainee burnout

## Methods

Cross-sectional study where vascular surgery trainees (integrated and traditional fellows) voluntarily completed a confidential survey after the 2022 VSITE.

- Self-reported questions:
  - Demographics
  - Mistreatment
  - Burnout
  - Attrition
  - Suicidal Ideation
  - Thoughts of career change
  - Work-related pain

Figure 1. Vascular Surgery Trainee Report

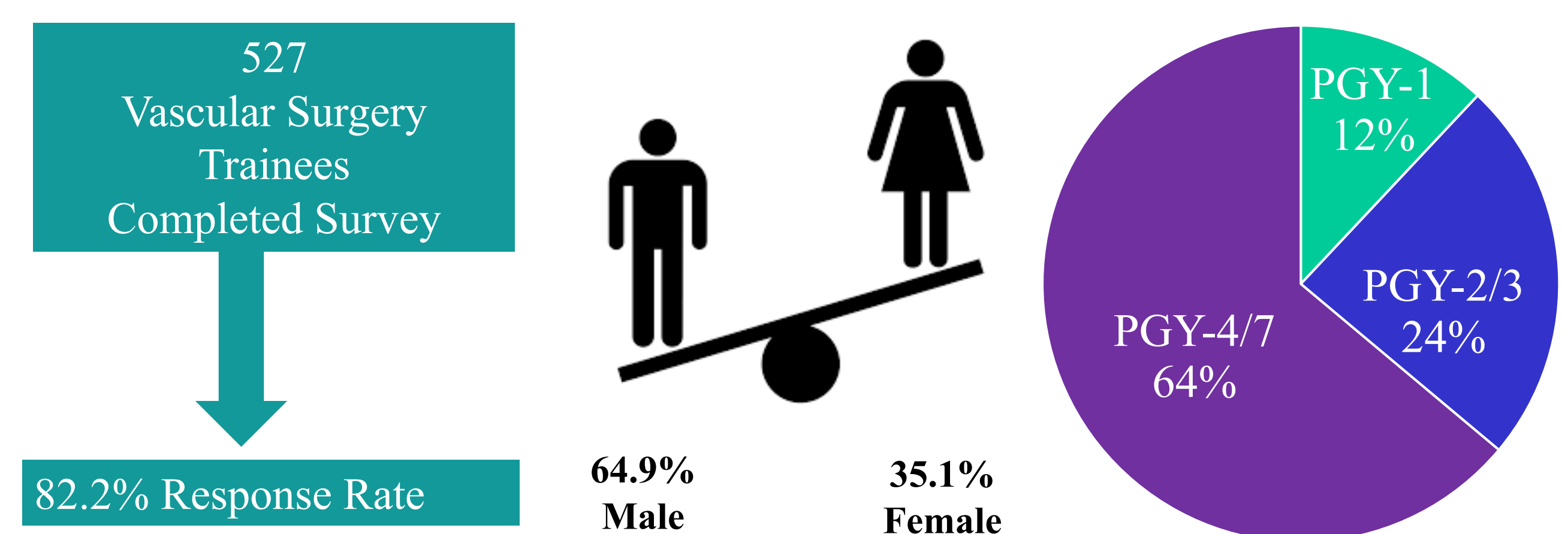


Table 1. Vascular Surgery Trainee Reported Pain

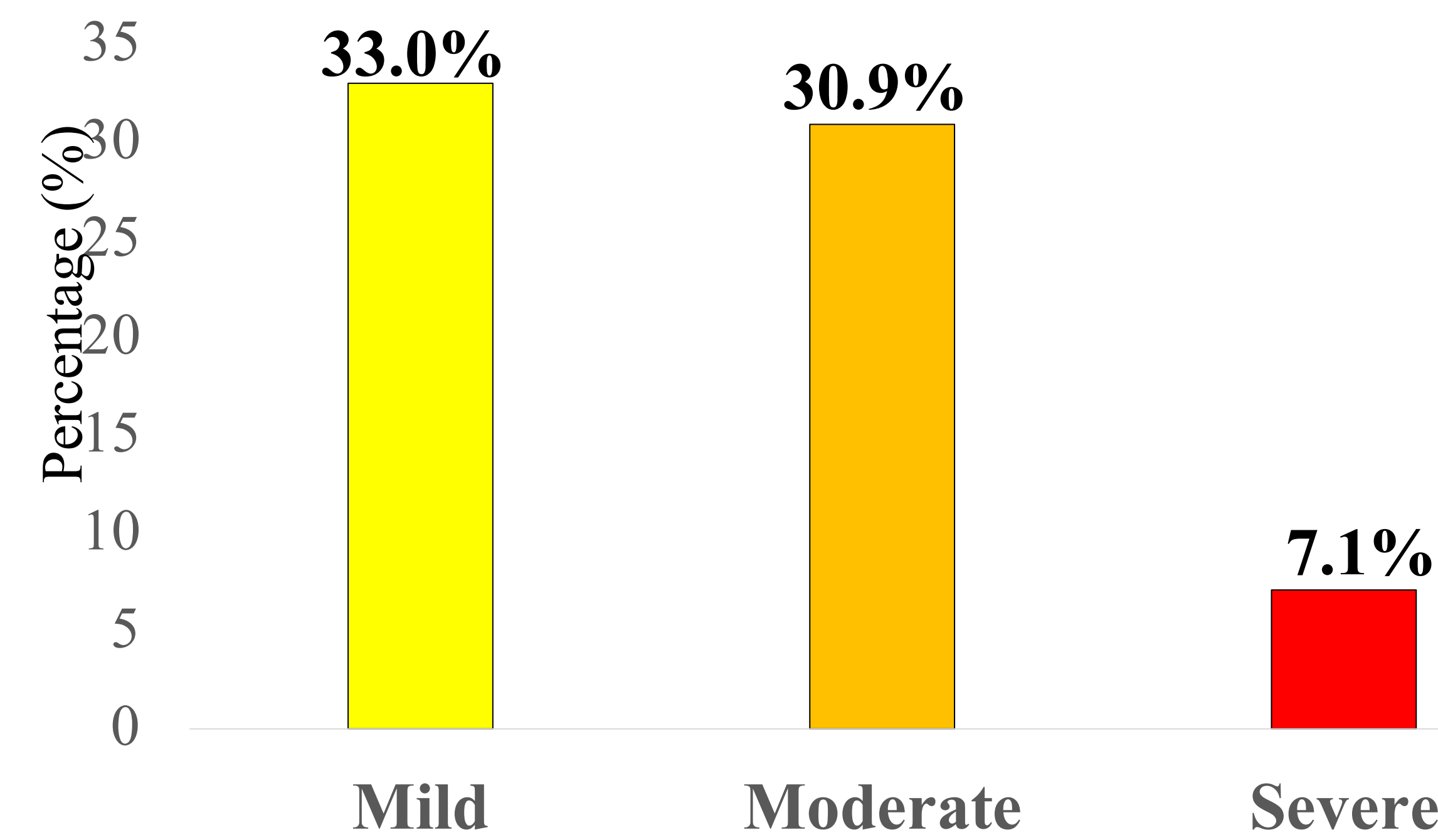


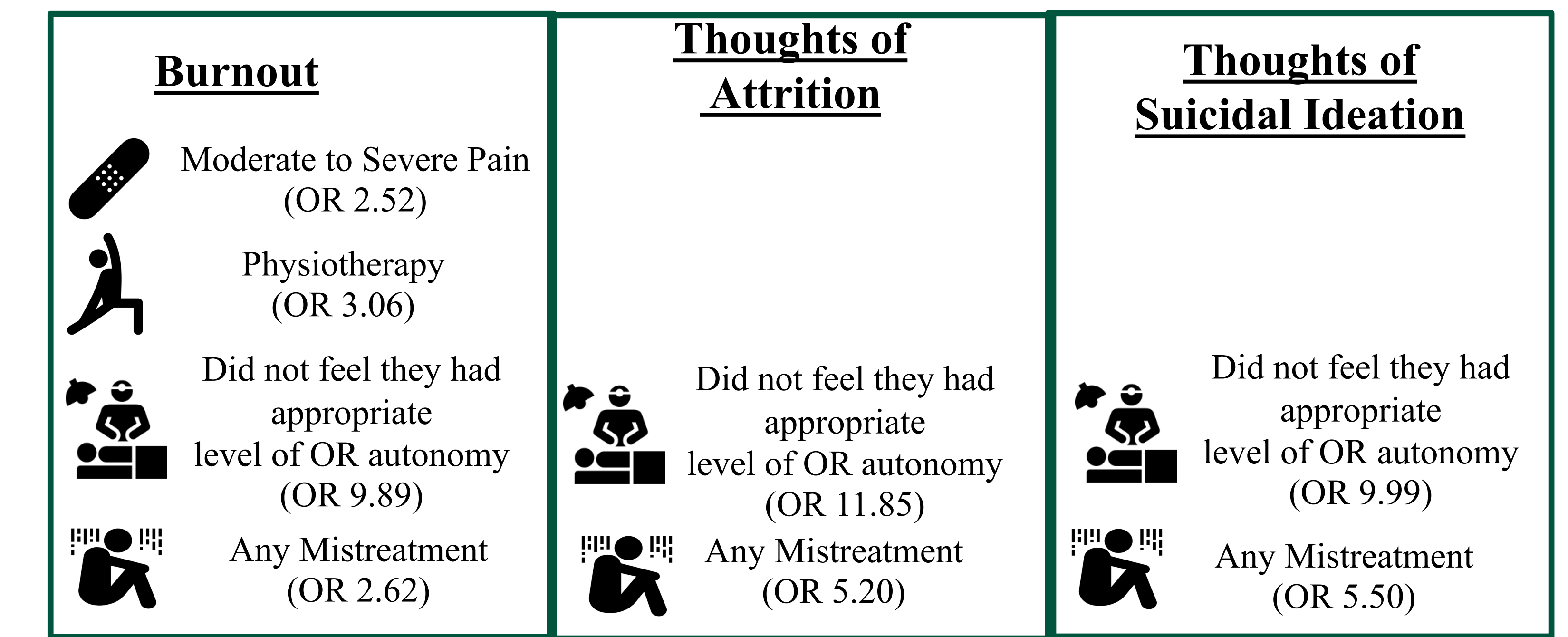
Table 2. Moderate to Severe Pain: Experiences

	Moderate to Severe Pain		p-value
	Yes (N=200, %)	No (N=327, %)	
Did not feel they had appropriate level of OR autonomy	8.3	4.1	0.06
Thoughts of Attrition	15.0	9.0	0.047
Thoughts of Career Change	14.5	7.9	0.02
Burnout	62.8	35.5	<0.001
Mistreatment	79.9	54.1	<0.001

Table 2. Reported Pain Management Modalities

	Moderate to severe (N=200, %)	Mild (N=174, %)	P-value
OTC Medications	61.0	47.7	0.01
Orthotics (e.g. brace, footwear, etc)	26.0	13.2	0.002
Yoga/Pilates	29.5	32.8	0.50
Physiotherapy	7.5	3.5	0.07
Massage/Chiropractic/Acupuncture	40.5	25.9	0.003
Ergonomic Adjustments	64.0	57.5	0.20

Figure 2. Associated Risk Factors



\*Adjusting for gender, reported pain, race/ethnicity, pain management modalities, training level

## Results

- 527 trainees completed the survey
- 71% of all trainees reported some form of work-related pain, with 33% reporting mild, followed by 31% moderate, and 7% severe
- There was a disproportionate amount of women reporting more moderate to severe pain compared to men.
- Trainees with moderate to severe pain had higher rates of thoughts of attrition, career change, burnout, and mistreatment.
- Moderate to severe pain, physiotherapy, lack of proper OR autonomy and any mistreatment were risk factors for burnout. Lack of proper OR autonomy and any mistreatment were risk factors for thoughts of career change and thoughts of suicidal ideal after adjusting for gender, reported pain, race/ethnicity, pain management modalities, and training level.

## Conclusions

- > 1/3 of trainees reported moderate to severe occupational pain
- More female trainees reported occupational pain than male trainees
- Work-related pain** remained an independent **risk factor** for trainee **burnout**, highlighting the need for targeted intervention