



Service Member and Provider Perspectives on Currently Available Ankle Braces



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INTRODUCTION

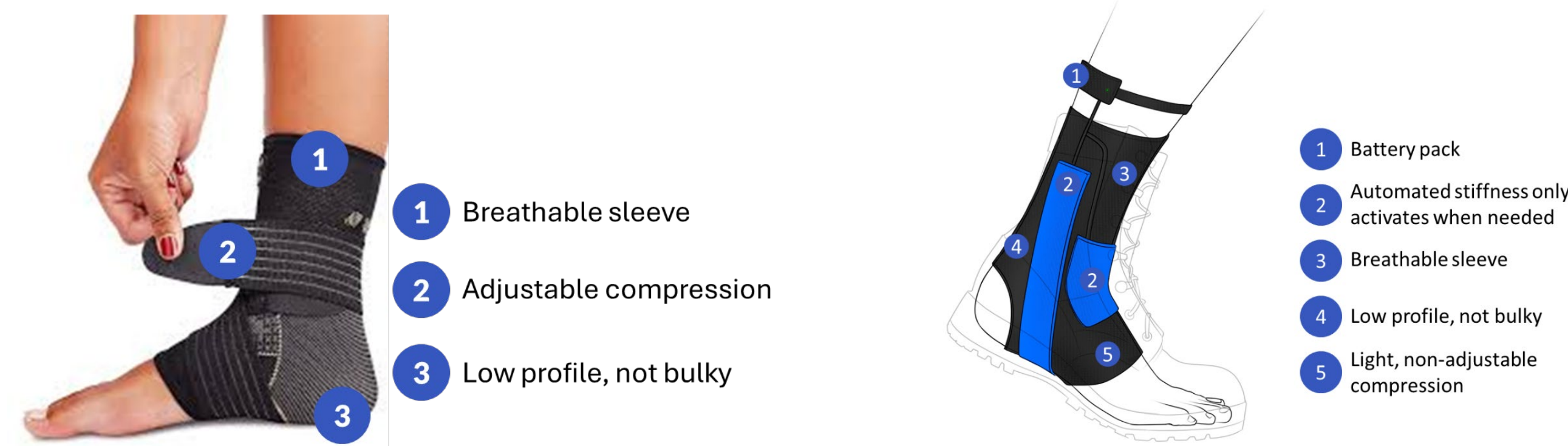
- Ankle injuries are a common occurrence among military personnel
- Current commercially available bracing options may not adequately address the unique demands of military users
- Lack of adherence may contribute to frequent and recurrent sprains
- **Purpose:** Compare patient and provider perceptions of usability, functionality, and overall ratings across currently available and proposed ankle brace designs through questionnaires

METHODS

- Questionnaires were administered to 74 active-duty military service members and 19 providers
- **Patients:**
 - 51 male
 - Age: 34.9 $\pm$ 8.3 years
 - (+) history of ankle sprain
 - 69 who had previously used an ankle brace
- Patients were asked if they would wear 8 commercially available brace designs and 1 proposed next-generation brace design
- Each brace had multiple positive and negative options
 - Assessed: shape, size, function, and usability
- Each brace had overall (1-100%) rating
- **Providers;**
 - 10 males
 - 9.3 $\pm$ 6.3 years' experience
 - All previously recommended ankle braces
- Providers were asked if they would recommend the same 9 braces with similar positive/negative options and overall 1-100% rating
- **Reported for both groups:**
 - Top 3 braces with highest overall wear ratings (average %)
 - Top 3 positive factor for each brace (number of responses)
 - Lowest 3 braces with highest overall wear ratings (average %)
 - Lowest 3 negative factor for each brace (number of responses)

RESULTS

Active Duty Service Members	
Highest Overall Wear Ratings	Mean Score (/100)
Adjustable Sleeve (Figure 1)	65.2
Standard Sleeve	64.3
Next Generation (Figure 2)	60.2
Top Positive Factors	Number of Responses (/74)
Easy to Don/Doff	Adjustable Sleeve: 50 Standard Sleeve: 64
Fits Easily in Boot	Standard Sleeve: 62
Provides Compression	Adjustable Sleeve: 60 Next Generation: 47
Lowest Overall Wear Ratings	Mean Score (/100)
Over Boot (Figure 3)	38.4
Hinge (Figure 4)	35.5
Stirrup	32.2
Top Negative Factors	Number of Responses (/74)
Difficult to Fit in Boots	Hinge: 55 Stirrup: 60
Bulky	Over Boot: 56 Hinge: 59 Stirrup: 59
Looks Uncomfortable	Hinge: 46 Stirrup: 51
Providers	
Highest Overall Wear Ratings	Mean Score (/100)
Lace Up	79.2
Adjustable Sleeve (Figure 1)	60.0
Next Generation (Figure 2)	56.7
Top Positive Factors	Number of Responses (/19)
Protects Against Injury	Lace Up: 18
Good Stability	Lace Up: 18
Fits Easily in Boot	Adjustable Sleeve: 16 Next Generation: 15
Lowest Overall Wear Ratings	Mean Score (/100)
Hinge (Figure 4)	36.0
Over Boot (Figure 3)	35.0
Stirrup	24.2
Top Negative Factors	Number of Responses (/19)
Difficult to Fit in Boots	Hinge: 17 Stirrup: 19
Bulky	Hinge: 14 Over Boot: 18 Stirrup: 17
Worn Outside of Boot	Over Boot: 15



Figures 1 and 2: Examples of high ranked brace designs by both groups.



Figures 3 and 4: Examples of lowest ranked brace designs by both groups.

CONCLUSIONS

- This study was conducted to identify user- and provider-informed design priorities for ankle braces that better align with military considerations and demands
- Both service members and providers favored adjustable sleeve and the novel next generation that fit easily within standard boots
- Patients also ranking simple sleeve highly
- Providers also ranked lace up highly
- Patients and providers valued different factors
 - e.g., compression, stability
- Bulkiness and poor boot compatibility were the primary reasons for low ratings
- **Highest priority goals for developing next generation brace:**
 - Improving adherence
 - Reducing reinjury risk
 - Enhancing operational readiness

DISCLAIMER

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