



Provider-Specific Trends in Dry Needling Practice in the Military Health System

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INTRODUCTION

Dry needling (DN) is an intervention employed by a myriad of providers to treat neuromusculoskeletal conditions. Active duty Service Members (ADSMs) are at an increased risk of developing neuromusculoskeletal conditions due to their occupational and fitness requirements.¹⁻³ Prior surveys within the United States have focused on physical therapists (PTs) within orthopedic treatment settings.⁴⁻⁸ This study aims to compare the current DN practices across different medical providers within the Military Health System (MHS).

METHODS

Purpose: To characterize the current DN practices of clinical providers within the MHS

Study Design: Descriptive survey-based study approved with exempt determination (**24-00027e**) by the U.S. Army Medical Center of Excellence Office of Research and Human Subjects Protections

Inclusion Criteria:

- ☐ Active duty and civilian clinical providers within MHS
- ☐ Age ≥ 18 years
- ☐ Physical Therapists (PT), Occupational Therapists (OT), Athletic Trainers (AT), Physicians, Physician Associates (PA), or Nurse Practitioners (NP)

Exclusion Criteria:

- ☐ Provider does not work in the MHS

Survey: The survey is comprised of 33 questions focused on provider characteristics, training/experience, clinical practice, perceived outcomes, safety, and barriers

Data Analysis: Categorical variables will be presented as counts and proportions. Unadjusted and adjusted logistic regression models were used to discern relationship between provider characteristics and current DN use.

RESULTS

- 755 participants (**61.3%** active duty) (**TABLE 1**) completed survey with **58.3%** (n=440) currently performing DN in their practice with the majority (n=319) performing with ≤ 25% of their caseload.
- Occupation, specialty certification, and treatment setting were associated with current DN use.
 - All occupations in comparison to PTs had lower odds of current DN use (***p* < 0.001**).
 - Providers with an orthopedics specialty certification (OR = 2.95, 95% CI: 1.63-5.33, ***p* < 0.001**) and those practicing in a human performance/sports medicine model (OR = 1.59, 95% CI: 1.17-2.15, ***p* = 0.003**) had significantly higher odds of currently using DN.
- Most frequently reported training organizations were the Defense Health Agency (DHA), Evidence in Motion/KinetaCore, and Army-Baylor University Doctor of Physical Therapy Program.
- The most common treatment tissue targets are muscle (99.2%), tendon (53.5%) and scar tissue (29.7%). (see **TABLE 2**)
- 24 respondents with DN experience reported major adverse events including: pneumothorax (n=8), severe fainting/syncope (n=8), and prolonged pain/aggravation of symptoms (n=5).
- Barriers are listed in **TABLE 3**.

Disclaimers: The opinions and assertions expressed herein are those of the author(s) and do not reflect the official policy or position of the Uniformed Services University or the Department of War (DoW). The views expressed in this poster are those of the author(s) and do not necessarily reflect the official policy of the Defense Health Agency, DoW nor the U.S. Government. The study protocol was approved with exempt determination by the U.S. Army Medical Center of Excellence Office of Research and Human Subjects Protections in compliance with all applicable Federal regulations governing the protection of human subjects. The authors have no financial interests or relationships to disclose.

TABLE 1: Clinical experience among all survey respondents

	All N=755		AT n=171 (22.6%)		OT n=55 (7.3%)		PT n=331 (43.8%)		PA n=156 (20.7%)		Physician n=17 (2.2%)		NP n=25 (3.3%)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Total years in independent clinical practice														
Less than 3	93	12.3%	11	6.4%	7	12.7%	31	9.4%	32	20.5%	8	47.1%	4	16.0%
3-5	128	17%	23	13.5%	11	20.0%	40	12.1%	46	29.5%	4	23.5%	4	16.0%
6-10	198	26.2%	53	31.0%	9	16.4%	89	26.9%	37	23.7%	1	5.9%	9	36.0%
>10	327	43.3%	79	46.2%	27	49.1%	170	51.4%	39	25.0%	4	23.5%	2	8.0%
Prefer not to answer	9	1.2%	5	2.9%	1	1.8%	1	0.3%	2	1.3%	0	0.0%	0	0.0%
Scope of current clinical practice (Select all)														
Outpatient Medical Clinic	479	63.4%	37	21.6%	34	61.8%	240	72.5%	130	83.3%	15	88.2%	23	92.0%
Human Performance/ Sports Medicine Model	280	37.1%	142	83.0%	17	30.9%	108	32.6%	3	1.9%	8	47.1%	2	8.0%
Operational/Unit	198	26.2%	40	23.4%	7	12.7%	75	22.7%	67	42.9%	2	11.8%	7	28.0%
Field/Deployment	81	10.7%	10	5.8%	4	7.3%	27	8.2%	36	23.1%	3	17.6%	1	4.0%
Inpatient	55	7.3%	1	0.6%	12	21.8%	24	7.3%	10	6.4%	8	47.1%	0	0.0%
Telehealth	59	7.8%	1	0.6%	3	5.5%	12	3.6%	29	18.6%	7	41.2%	7	28.0%
Other (please specify)	41	5.4%	10	5.8%	2	3.6%	15	4.5%	12	7.7%	1	5.9%	0	0.0%
Prefer not to answer	1	0.1%	0	0.0%	0	0.0%	1	0.3%	0	0.0%	0	0.0%	0	0.0%

The top 3 selected clinical practice settings are highlighted in red for each occupation.

TABLE 2: Selected and ranked treatment regions across all provider types for current and previous DN users

Selected Body Regions	All (N=518)		AT (n=98)		OT (n=36)		PT (n=322)		PA (n=41)		Physician (n=15)		NP (n=6)	
	N (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)
Shoulder	479 (92.5%)	0.44 (0.25)	90 (52.6%)	0.41 (0.23)	30 (54.5%)	0.5 (0.25)	304 (91.8%)	0.42 (0.25)	37 (90.2%)	0.59 (0.29)	12 (80.0%)	0.49 (0.22)	6 (100.00%)	0.54 (0.33)
Low Back/Pelvis	454 (87.6%)	0.48 (0.29)	89 (52.1%)	0.35 (0.22)	2 (3.6%)	0.79 (0.3)	308 (93.1%)	0.52 (0.29)	37 (90.2%)	0.47 (0.29)	13 (86.7%)	0.59 (0.35)	5 (83.33%)	0.22 (0.09)
Head/Neck	445 (85.9%)	0.39 (0.26)	81 (47.4%)	0.4 (0.27)	17 (30.9%)	0.58 (0.22)	296 (89.4%)	0.37 (0.25)	34 (82.9%)	0.39 (0.2)	12 (80.0%)	0.39 (0.24)	5 (83.33%)	0.61 (0.45)
Hip	416 (80.3%)	0.53 (0.24)	85 (49.7%)	0.5 (0.24)	1 (1.8%)	0.71 (N/A)	292 (88.2%)	0.52 (0.24)	23 (56.1%)	0.67 (0.27)	10 (66.7%)	0.77 (0.17)	5 (83.33%)	0.38 (0.2)
Elbow	386 (74.5%)	0.65 (0.26)	82 (47.9%)	0.69 (0.24)	36 (65.5%)	0.55 (0.28)	238 (71.9%)	0.64 (0.26)	19 (46.3%)	0.71 (0.18)	6 (40.0%)	0.74 (0.21)	5 (83.33%)	0.69 (0.15)
Knee	363 (70.1%)	0.72 (0.23)	86 (50.3%)	0.66 (0.24)	1 (1.8%)	0.86 (N/A)	252 (76.1%)	0.74 (0.22)	12 (29.3%)	0.7 (0.25)	8 (53.3%)	0.65 (0.34)	4 (66.67%)	0.48 (0.16)
Foot/Ankle	341 (65.8%)	0.73 (0.24)	83 (48.5%)	0.74 (0.24)	1 (1.8%)	1 (N/A)	234 (70.7%)	0.72 (0.24)	12 (29.3%)	0.72 (0.29)	6 (40.0%)	0.81 (0.19)	5 (83.33%)	0.73 (0.28)
Mid-Back	276 (53.3%)	0.59 (0.25)	46 (26.9%)	0.56 (0.23)	4 (7.3%)	0.71 (0.25)	187 (56.5%)	0.61 (0.25)	22 (53.7%)	0.54 (0.29)	13 (86.7%)	0.5 (0.3)	4 (66.67%)	0.51 (0.09)
Hand/Wrist	217 (41.9%)	0.86 (0.20)	66 (38.6%)	0.84 (0.22)	32 (58.2%)	0.86 (0.22)	99 (29.9%)	0.88 (0.17)	11 (26.8%)	0.84 (0.21)	6 (40.0%)	0.76 (0.19)	3 (50.00%)	0.77 (0.18)
Other	29 (5.6%)	0.63 (0.28)	6 (6.1%)	0.6 (0.29)	1 (2.78%)	0.71 (N/A)	9 (2.8%)	0.61 (0.27)	15 (36.6%)	0.79 (0.28)	1 (6.7%)	0.23 (0.04)	0 (0.00%)	N/A
Prefer not to answer	1 (0.2%)	N/A	0	N/A	0	N/A	1 (0.3%)	N/A	0	N/A	0	N/A	0	N/A

M (SD), mean (standard deviation) normalized rank (each raw rank divided by N regions selected; lower mean = more beneficial)
The top 3 selected treatment regions are highlighted in red for each occupation and the top 3 treatment regions considered to have most beneficial response to DN are highlighted in yellow. Some occupations may have >3 regions highlighted if multiple body regions have same frequency or ranking.

TABLE 3: Barriers among all survey respondents

Barrier	Total Sample	
	n	% (N)
N/A - Did not decrease use	272	36.03%
Difficulty obtaining credentialing privileges	144	19.07%
Clinical demands in other areas or responsibilities	119	15.76%
Concern about variable clinical outcomes	34	4.50%
Insufficient time	128	16.95%
Job assignment outside of patient care	100	13.25%
Lack of budget	60	7.95%
Lack of training	161	21.32%
Level of confidence/comfort in performing procedures	47	6.23%
Limited clinic resources	79	10.46%
Limited evidence	40	5.30%
State licensure restrictions	47	6.23%
Other	58	7.68%
Institutional restrictions (e.g., DHA or MTF)	35	4.64%
Not a primary intervention in provider's clinical practice	10	1.32%
Patient preference not to be needled	1	0.13%
Provider needle phobia	2	0.26%
Reimbursement concerns	2	0.26%
Still in training or early in career	3	0.40%
Others	5	0.66%
Prefer not to answer	18	2.38%

The top 3 barriers are highlighted in red.

CONCLUSIONS

Neuromusculoskeletal injuries remain a prevalent barrier to military readiness, therefore, having a minimally invasive intervention at the fingertips of medical personnel is valuable.¹⁻³ PTs followed by ATs and PAs are most often using this modality as an adjunct to treat the shoulder, head/neck, and low back/pelvis within a variety of settings within the MHS. Survey results support the need for practice and training standardization, streamlined credentialing processes, and more prospective research protocols to help shape policy and clinical practice guidelines.

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REFERENCES

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