Physical therapists' ability to recognize inflammatory arthritis cases and awareness of importance for their prompt referral to rheumatology

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BACKGROUND

- Early referral to rheumatology of persons with suspected inflammatory rheumatic disease is associated with better outcomes. (Feldman, 2013, Quinn, 2003, Verstappen, 2005)
- Imperative that referral system be efficient after symptom onset.
- Persons with undiagnosed rheumatic disease may directly consult a physical therapist (PT) in the Canadian private sector without physician referral.
- PTs have excellent knowledge in managing musculoskeletal problems. (Childs, 2005)
- Direct referral to a rheumatologist by a PT could enhance early access to a rheumatologist for patients with inflammatory arthritis.

OBJECTIVES

1) To investigate whether PTs can correctly identify new-onset inflammatory arthritis and differentiate between these cases and other musculoskeletal problems;
2) To assess whether PTs are aware that persons with new-onset inflammatory arthritis should be seen promptly by a rheumatologist;
3) To explore whether PTs feel comfortable referring patients to a specialist;
4) To determine factors that are associated with correctly diagnosing inflammatory arthritis and appropriately referring to a rheumatologist.

METHODS

- Surveyed PTs in Quebec and Alberta, where PTs are permitted to refer patients directly to medical specialists.
  - surveys sent via professional licensing bodies and associations and completed through an online platform.
- Survey contained four case scenarios:
  - new-onset rheumatoid arthritis - RA;
  - knee osteoarthritis - OA;
  - new-onset ankylosing spondylitis - AS; and
  - low back pain- LBP.
- Participants were asked:
  - to identify probable diagnoses;
  - to indicate their plan of action including referral to other professionals; and
  - to specify their comfort level to refer to specialists.

ANALYSIS

- Descriptive statistics
- Bivariate analysis (chi-square analysis)
- Logistic regression
  - 3 models: for correctly diagnosing RA, OA, AS
  - 3 models: for referring to a rheumatologist for RA, OA, AS
  - 1 model: for comfort in referring to a specialist.

RESULTS

- 369 respondents opened the survey (16% response rate)
- 352 responded to some questions; 329 responded to all demographic questions; 216 completed every question.
  - Alberta: 54 (15.3%) ; Quebec: 298 (84.7%)
  - Females: 75.6%
  - Postgraduate degree: 54.1%
  - Public sector: 54.1%
  - Experience ≤ 5 years: 22.2%
  - Rural practice: 19.8%
- Comparisons with national statistics of PTs in both provinces:
  - More rural participants in our sample (p<.001)
  - More working in public sector in our sample (p<.001 Alberta; p=.015 Quebec)
  - More participants had postgraduate degrees (p<.05 Alberta; p<.001 Quebec)

Outcomes frequencies

	N	%
RA case: Correct diagnosis?	243	90.0
Incorrect diagnosis	27	10.0
Referral to rheumatologist	203	75.2
Referral among those with correct diagnosis	187	77.0
OA case: Correct diagnosis?	195	83.0
Incorrect diagnosis	40	17.0
Referral to rheumatologist	86	36.6
Referral among those with correct diagnosis?	58	29.8
AS case: Correct diagnosis?	170	76.9
Incorrect diagnosis	51	23.1
Referral to rheumatologist	128	57.9
Referral among those with correct diagnosis?	124	72.9
LBP case: Correct diagnosis?	219	100
Incorrect diagnosis	0	0
Referral to rheumatologist	6	2.7
Comfort in referring to a specialist: very or extremely comfortable	141	65.3

Factors associated with feeling comfortable to refer to a specialist

Factor	Odds Ratio	95% Confidence Interval
>50% MSK caseload	1.80	0.73,4.43
Male PT respondents	1.71	0.80,3.68
>5 years experience	3.35	1.62,6.91
Public sector vs private	0.69	0.34,1.40
Rheumatology continuing-ed	2.69	0.51,14.12
Practice: Group with MD	Reference	
Group with no MD	0.95	0.46,1.99
Solo	0.65	0.26,1.59
Quebec vs Alberta	0.47	0.18,1.22
Rural vs Urban	0.50	0.23,1.10

Factors associated with correct diagnosis

	RA: Odds Ratio (95% Confidence Interval)	OA: Odds Ratio (95% Confidence Interval)	AS: Odds Ratio (95% Confidence Interval)
>50% MSK caseload	2.02 (0.61,6.68)	0.44 (0.14,1.42)	1.42 (0.56,3.65)
Male PT respondents	0.53 (0.22,1.26)	1.72 (0.73,4.06)	1.54 (0.70,3.44)
>5 years experience	0.71 (0.25,2.00)	1.24 (0.55,2.81)	1.09 (0.50,2.36)
Public sector vs private	1.71 (0.65,4.49)	0.81 (0.38,1.75)	0.99 (0.48,2.08)
Rheumatology continuing-ed	undefined	2.85 (0.35,23.45)	3.26 (0.39,27.18)
Group with MD	Reference	Reference	Reference
Group without MD	1.54 (0.58,4.08)	1.46 (0.65,3.27)	0.82 (0.36,1.83)
Solo	1.29 (0.41,4.09)	1.49 (0.55,4.04)	0.46 (0.18,1.18)
Quebec vs Alberta	0.69 (0.18,2.69)	0.87 (0.30,2.51)	0.28 (0.09,0.90)
Rural vs Urban	1.89 (0.50,7.10)	1.06 (0.41,2.72)	0.78 (0.34,1.81)

Factors associated with referral to a rheumatologist

	RA: Odds Ratio (95% Confidence Interval)	OA: Odds Ratio (95% Confidence Interval)	AS: Odds Ratio (95% Confidence Interval)
>50% MSK caseload	0.76 (0.31,1.86)	1.35 (0.56,3.30)	1.35 (0.43,4.30)
Male PT respondents	1.13 (0.58,2.20)	1.00 (0.51,1.97)	1.01 (0.47,2.17)
>5 years experience	1.81 (0.94,3.49)	0.90 (0.44,1.86)	1.98 (0.88,4.46)
Public sector vs private	0.88 (0.46,1.68)	1.88 (0.97,3.65)	3.17 (1.38,7.29)
Rheumatology continuing-ed	3.07 (0.38,24.78)	0.87 (0.22,3.37)	8.31 (0.51,135.0)
Practice: Group with MD	Reference	Reference	Reference
Group with no MD	0.94 (0.47,1.87)	1.12 (0.56,2.25)	1.20 (0.52,2.74)
Solo	0.76 (0.34,1.72)	1.02 (0.43,2.40)	0.95 (0.35,2.60)
Quebec vs Alberta	1.15 (0.51,2.60)	0.84 (0.35,2.04)	0.74 (0.28,1.99)
Rural vs Urban	0.54 (0.26,1.11)	0.20 (0.76,0.52)	0.36 (0.15,0.86)
Correct diagnosis	2.64 (1.12,6.23)	0.16 (0.07,0.36)	39.55 (12.36,126.52)

DISCUSSION

- Most PTs correctly identified cases of RA, OA, AS and LBP.
  - PTs from Alberta were more likely to correctly identify AS.
- Referral to a rheumatologist highest for RA, then AS and much lower for OA.
  - PTs who correctly identified the cases were more likely to refer those with RA and AS and less likely to refer those with OA.
    - This is in line with current recommendations that cases with inflammatory arthritis be seen rapidly. (Emery, 2002, Quinn, 2003)
  - PTs working in rural areas less likely to refer to a rheumatologist.
    - May be influenced by the fact that there are fewer rheumatologists working in rural areas. (American College of Rheumatology, 2013)
- Comfort level to refer to a specialist was high among 2/3 of PTs.
  - PTs with more experience were more comfortable to refer.
    - Experience may be related to confidence in assessing patients and comfort to refer.
    - Patient related factors associated with referral to specialists have been studied. (Boissonnault, 2012)
    - However, no other studies to date have assessed PT related factors.

LIMITATIONS

- Selection bias may limit generalizability to the entire PT population.
  - Response rate estimated at 16% which is comparable to previous online surveys in PT. (Laliberté, 2017; Olkowski, 2014)
- Sample representative of the Quebec and Alberta PT population except for:
  - Higher proportion working in the public sector: comparison statistics were from 7 years ago; more PTs currently working in the private sector, with cuts in public sector PT. (Laliberté, 2018)
  - Higher proportion with postgraduate degrees: persons with masters degrees may be more likely to participate in research projects.
  - Higher proportion working in rural areas: however the numbers were small for the rural sector.

CONCLUSION

- Most PTs
  - correctly diagnosed the clinical cases;
  - were aware of the importance of prompt referral to rheumatology of patients with suspected inflammatory disease;
  - indicated that it was not very important to refer cases with OA and LBP;
  - felt comfortable referring to a specialist.
- The implications are that many PTs can distinguish between those with inflammatory and noninflammatory conditions and appropriately refer suspected inflammatory arthritis to rheumatology.

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