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A gender perspective on physiotherapy treatment in patients with neck and back pain

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Abstract

Women report more pain from the musculoskeletal system, and more disability, than do men. As a consequence, women more often seek health care than men do, and are more often on sick leave. Research shows that female patients and male patients are treated differently by physicians and that the physician's gender also influenced the choice of treatment. The aim was to study whether the patients' and/or the physiotherapists' gender influences physiotherapy treatments for patients with neck and/or low back pain.

During three days in April 2006, 73 physiotherapists in primary care and private practices collected information on 586 patients with neck and/or low back pain. The information included data on the affected pain sites and the treatment procedures used by the physiotherapist. Baseline data on the physiotherapists were collected with a questionnaire. The results showed that female and male physiotherapists mainly used the same treatment procedures, but with some differences. The female physiotherapists used significantly more acupuncture and procedures directed toward treatment of mental function. They also gave their patients a unique combination of treatment procedures to a greater extent than their male colleagues. The male physiotherapists used significantly more training of joint mobility. Male and female patients were given the same treatment.

Key words physiotherapy, gender, cross-sectional study, questionnaire.

Introduction

The lifetime prevalence of low back pain in Sweden is about 80%, and 50% for neck pain (1). The difference between women and men in the prevalence of back pain is minor (2), but the prevalence of neck pain is higher among women (3). Generally women report more pain from the musculoskeletal system (4). Women seek health care for neck pain to a greater extent than men; they are more often on sick leave; and they take early retirement more often because of musculoskeletal disorders (5).

Few studies have investigated whether women and men with neck or back pain show different symptoms in medical examinations and the results are contradictory. In a study of back pain, women show lower functional capacity, and had more depressive symptoms than men (6), while in another study men reported higher pain intensity (7).

In patients with disabling pain, women were more often found to be treated with drugs, physical therapy, acupuncture, ergonomics, psychosomatic treatment, information, and relaxation therapy, while men more often had surgery and joint

manipulation (8), but it was not reported whether this was a desire from the patients or a therapeutic choice. In another study, doctors suggested that men with neck pain should be sent for laboratory tests, while women more often had diagnostic referral to a physiotherapist or an orthopaedist, and were given prescriptions for drugs (9). The gender of the doctor also impacts on which treatment of neck pain (9) and back pain (10) men and women receive, while the female physicians were more likely to give special treatment to the women and male physicians to the men.

Low back and neck pain are among the most frequent complaints in physiotherapy clinics. Physiotherapists in public health care in Sweden make independent choice of treatment based on their own assessment. The most common physiotherapy treatments are education, joint mobilisation/manipulation, thermal modalities, electrotherapy, training, and acupuncture (11-14). Differences in how women and men react to physiotherapy treatments are studied to a lesser extent, but one study reports similar physical therapy outcomes for reduction of pain intensity, and pain related disability for men and woman in acute low back pain (7). In a qualitative study, women experienced more hindrances in the whole rehabilitation process than men (15).

In most cases, neck and low back complaints are non-specific diagnoses, and the etiology is mostly unclear. This could make the choice of treatment more open to other factors than medical symptoms alone. The biopsychosocial model is often used to explain and treat neck or back pain among physiotherapists (PTs) (16), but

there has been little consideration given to the influence of gender on this model.

Aim

This study was conducted in order to assess if the patients' and/or the physiotherapists' gender influences the physiotherapy treatment given to patients with neck and/or low back pain.

Method

The method used in this study was a survey including a questionnaire and patient forms. All publicly-financed PTs in Västerbottens county council, Sweden, both in private clinics and in healthcare centres, were asked to answer a questionnaire and to record all the patients visiting the clinic during three days in April 2006.

Procedure

Information was distributed by e-mail and mail, and during staff meetings. The questionnaire was web-based and distributed by e-mail during April 2006. PTs without an e-mail address were sent the information, and the web addresses to the questionnaire, by ordinary mail. Three PTs did not have a computer, and were offered a paper version of the questionnaire. A reminder was sent by mail and e-mail after the closing date, and those who had not replied were contacted by phone a week later.

Study population

One hundred and sixteen primary care PTs financed by the county council of Västerbotten were asked to participate in the study, and 80 (69%) agreed (Figure 1). Sixty-five percent of the participants were women; the mean age was 48 years (SD 10.0); and 38% worked in private clinics.

Figure 1 Flowchart of physiotherapists participating in the study

Seventy-three of the respondents had treated patients with neck and back pain, and filled in patients' forms. Our study group consisted of these PTs and their 586 patients. Eight forms were excluded because the information about patients' sexes was missing

The questionnaires

The questionnaire was based on a questionnaire from Swedish Association of Registered Physiotherapists and contained background data about the physiotherapists' age, length of service in the profession, further education, and postgraduate studies.

Patient form

For each patient who visited the clinic between 16 and 18 April, the patient's age, length of sick leave, site of complaint, and treatment procedures (TPs) were recorded in addition to the normal practice. Individual patients could not be identified in the patient forms. Ethical approval was not requested for as the study was conducted as part of a clinical quality evaluation project and ethical approval is not demanded for such projects in Sweden. Registration of the site of complaint was based on the PTs examination. Patients' complaints were recorded according to location: neck complaints, including whiplash associated disorder (WAD); thoracic spine complaints; and low back

complaints, including pelvic (but not pregnancy-related) complaints. Patients who had neck and back complaints along with other diagnoses were excluded.

To record the treatment procedures (TPs) in the patient forms, the *Classification of treatment procedures (KVÅ)* (17) was used. This classification is prepared by the Swedish National Board of Health and Welfare, and is based on the International Classification of Functioning, Disability and Health (ICF) (18). For example, "Pain treatment given as acupuncture" links with the ICF code b280; Sensation of pain. The KVÅ contains about 400 procedures, described in detail, to be used in nursing, occupational therapy, and physiotherapy contexts. For this study, experienced PTs selected 98 TPs and their descriptions from KVÅ, which they considered applicable to physiotherapy. To fill in the patients form in the study the PTs chose one or more of these TPs with a cross mark.

Drop-outs

There were significantly fewer women (33%) among the drop-outs, compared with those who replied. No significant difference could be seen between the drop-outs and the replies received among the proportion of PTs working in private clinics or in age.

Data handling and statistics

In patients with neck and spine complaints, 42 of the selected TPs were used. TPs used in fewer than 10 patients were combined to form larger units if they served the same purpose, if not they were excluded. For example training of balance, dizziness training, prevention of falling and proprioceptive training were brought together to the unit, treatment of sensory function (Table1). The TPs that were used in the analysis are presented in Table 1.

For the statistical analysis we used the software Statistical Package for Social Sciences 14.0 (SPSS Inc., Chicago, IL, USA) and Stata software version 9.1 (Stata Corp., College Station, Texas). Female and male patients were compared using the X^2 test, or Fisher's exact. Mann-Whitney U test were used to detect differences between groups. Logistic regressions with cluster analysis were used to detect differences in TPs between female and male PTs. A 95 % significance level was used.

Table1: Treatment procedures, and their related ICF codes, used in the analysis

<p>Treatment of mental functions (unit)</p> <ul style="list-style-type: none"> • Training of purposefulness (ICFb130), support in anxiety (ICF b152), cognitive training (ICF b164), body-mind training (ICF b180), body image training (ICF b180) <p>Treatment of sensory functions (unit)</p> <ul style="list-style-type: none"> • Training of balance (ICF b235), dizziness training (ICF b240), prevention of falling (ICF b240), proprioceptive training (ICF b260) <p>Pain treatment</p> <ul style="list-style-type: none"> • Massage (ICF b280) • Pain-reducing treatment (ICF b280) (training with apparatus that takes the patient's weight, rest positions, relaxation, body-mind training, pool training, orthosis, ergonomic initiatives) • Acupuncture (ICF b280) • Transcutaneous electrical nerve stimulation (TENS) (ICF B280) • Physical treatment (heat, cold, ultrasonic, and/or water to reduce pain (ICF b280)) <p>Neuromusculoskeletal and movement-related functions</p> <ul style="list-style-type: none"> • Training of joint motion (treatment with active and passive motions, training with various types of apparatus, manual therapy such as joint release, manipulation) (ICF b710, 720) • Training of joint stability (ICF b715) • Training of muscle function and strength (ICF b730-740) • Training of postural reactions (ICF b 55) • Training of coordination (ICF b760) • Relaxation (ICF b780) <p>Information to / education of the patient</p> <ul style="list-style-type: none"> • Information and education about health / ill health (ICF d570) • Information and education about pain and pain treatment (ICF d570)

Results

Basic variables (Physiotherapists)

The mean age among the 73 participating PTs was 48.0 years (SD 10.2), and on average they had graduated 17.6 years earlier (SD 9.3). Significantly more women (70%) ($p=0.035$) worked in public health care centers. Female and male PTs had undergone continuing education and taken courses in manual methods (back courses, muscle energy technique, low force manipulation, orthopedic manual therapy, manipulation) and acupuncture to the same extent. Significantly more female PTs had had further education in body-mind therapies (Body awareness training, Resource-oriented body examination method, Body awareness scale) (33.3%)

compared with male PTs (3.6%) ($p=0.003$).

The PTs contributed on average with eight (SD 8.1, range 1-47) forms on patients with neck and or spine complaints to the study .The female PTs had fewer patient forms (mean 4.8, SD 4.2) than the male PTs (mean 13.4, SD 11.2). One male physiotherapist had recorded 47 patient forms. When he was excluded, the mean for males dropped to 12.1 patients (SD 9.3)($p=0.000$), which was still significantly higher than the female PTs.

Basic variables (Patients)

Forms on 586 patients with neck and back complaints were recorded, 399 women and

Table 2: The distribution of female and male patients among female and male physiotherapists, kind of clinic, site of complaint, and sick leave

	<i>Patients n=586</i>					
	<i>Women n=399</i>		<i>Men n=187</i>		<i>Total</i>	
	<i>(% total women)</i>		<i>(% total men)</i>		<i>(% total patients)</i>	
Female physiotherapist	143	(35.8)*	49	(26.2)	192	(32.8)
Male physiotherapist	256	(64.1)	138	(73.8)*	394	(67.2)
Kind of clinic						
Private clinic	233	(58.4)	115	(61.5)	348	(59.4)
Health care centre	166	(41.6)	72	(38.5)	238	(40.5)
Site of complaint						
Neck	140	(35.1)	63	(33.7)	203	(34.6)
Thoracic spine	27	(6.8)	16	(8.6)	43	(7.3)
Low back	141	(35.3)	77	(41.2)	218	(37.2)
Complaint about more than one site	91	(22.8)	31	(16.6)	122	(20.8)

* p=0.05 differences between female and male patients

187 men, whose ages ranged between 11 and 91 years (SD 16.2). The mean age was 49.2 years with no significant difference between men and woman. Male patients had more often consulted a male physiotherapist, and female patients a female physiotherapist (p=0.021) (Table 2). The most prevalent problem was complaints about low back pain (37.2%) (Table 2).

Modes of treatment

There were no differences between the female and male patients in how many TPs they received, and no differences between the female and male PTs in how many TPs they gave to each patient. The used TPs can be seen in table 3. The 42 TPs were combined differently by the PTs, which could mean that some patients were treated with a unique combination of TPs. Thirty-

one percent of the patients received a unique combination of TPs. The female PTs, more often gave their patients a unique combination of TPs (43%) compared with their male colleagues (25%)(p<0.000). No differences could be seen between PTs working in public health care centres and those in private practices.

Female and male PTs mostly chose the same TPs, with a few differences: female PTs used significantly more treatment of mental functions and acupuncture than their male colleagues, while the male PTs used treatment of joint motion to a greater extent (Table 4).

Table 3: Treatment procedures in different sites of complaint

	<i>The distribution (%) of different treatment procedures</i>				
	<i>Neck</i> n=203	<i>Thoracic spine</i> n=43	<i>Low back</i> n=218	<i>Complaint about more than one area</i> n=122	<i>Total</i> n=586
<i>Treatment procedures</i>					
Training of joint motion	49	54	44	49	48
Training of muscle function and strength	23	19	35	40	31
Massage	37	33	19	28	31
Physical treatment	32	33	22	29	28
Information and education about health / ill health	17	25	31	24	24
Acupuncture	25	14	12	20	18
Pain-reducing treatment	17	21	14	24	17
Information and education about pain and pain treatment	10	9	14	20	14
Training of joint stability	8	2	16	17	13
TENS	8	9	13	11	11
Coordination training	9	0	9	15	10
Relaxation	11	7	4	10	8
Training of postural reactions	2	2	5	2	3
Treatment of mental functions	5	2	1	4	3
Treatment of sensory functions	4	0	0	6	3

Discussion

The results of this study shows minor differences in female and male physiotherapists (PTs) use of treatments procedures (TPs) for patients with neck and back pain, with female PTs more frequent choice of treatment of mental functions and acupuncture and male PTs choice of treatment of joint motion.

Female and male physiotherapist mostly used the same TPs, and the most frequently used treatments; training of joint motion

and training of muscle function and strength are based on evidence of effectiveness (19-21). The treatments chosen are also in line with the choice of Canadian PTs choice of treatment for patients with low back pain (14).

The difference between male and female PTs in their choices of treatments could be explained by difference in patient's special requirements of treatment, the PTs different preferences of treatment or an interaction between these two. Our data on

Table 4: Female and male physiotherapists' choices of treatment procedures

Treatment procedures	<i>Modes of treatment</i>		Adjusted for 73 clusters in STATA	
	<i>Patients treated</i>	<i>Patients treated</i>	Odds ratio	95 % CI
	<i>by female</i>	<i>by male</i>		
	<i>physiotherapists</i>	<i>physiotherapists</i>		
	<i>as a percentage</i>	<i>as a percentage</i>		
	<i>n=192</i>	<i>n=394</i>	0=female 1=male	
Treatment of mental function	8.9	0*		
Treatment of sensory functions	3.1	2.5	0.8	0.2-2.9
Massage	30.7	31.0	1.0	0.5-2.0
Pain-reducing treatment	24.0	14.2	0.5	0.2-1.5
Acupuncture	26.0	14.5	0.5	0.3-0.8
TENS	8.9	11.7	1.4	0.4-4.2
Physical treatment	22.9	29.9	1.4	0.6-3.5
Training of joint motion	34.4	54.3	2.3	1.2-4.2
Training of joint stability	10.9	13.7	1.3	0.6-2.8
Muscle function training and strength training	29.7	31.2	1.1	0.5-2.2
Training of postural reactions	4.2	2.8	0.7	0.2-2.5
Coordination training	13.0	7.9	0.6	0.2-1.6
Relaxation	10.9	5.8	0.5	0.2-1.3
Information and education about health / ill health	18.2	27.2	1.7	0.7-3.9
Information and education about pain and pain treatment	14.6	12.9	0.9	0.2-3.4

* p=0.05 Fisher's exact test

the patient's are not detailed enough to allow an analysis based on patients requirements.

However, the result in our study that male patients more often were treated by a male physiotherapist and female patients by a female physiotherapist could indicate that the patient's expectations were different. There are no studies on patient's choice of PTs, but female patients in a Dutch study were found to prefer a female physician

(22). Men with low back pain have earlier been found to visit alternative caregivers to a higher extent than women with low back pain (23). Also, in a study by Mullersdorf et al. (8) the desired treatment by male patients with disabling pain was surgery, while women in the same study chose ergonomics, psychological support and body awareness therapy although the differences in symptoms did not confirm the need of different treatments. This could

reflect a more mechanical view of back pain in male patients and PTs and a more open attitude towards the influence of psychological and social factors on back pain in female patients and PTs. In a study female general practitioners noticed other health problems than their male colleagues, and spent more time on their patients (22).

There are no earlier studies on gender differences in PTs choices of treatments, but the results are in line with studies showing that female and male physicians recommend different treatments for male and female patients with neck and back pain (9, 10). An explanation to such differences could be that social norms about appropriate behaviour for women and men affect both health professionals and patients. In the western world stereotyped views of femininity and how to be a woman emphasise care and relationship building, while masculinity and how to be a man represent power and independence.

Dahle (24) describes how PTs shape the therapist role in accordance with gender norms. The

Female PTs tend to integrate concepts as caring rationality in their therapist's role. A caring rationality is associated with femininity and based on values such as empathy and sensitivity. Male PTs choose to define their therapist's role as a goal-oriented rationality associated with masculinity, where criteria such as efficiency, mastery and control are important (24). Such differences in attitudes to the professional role could influence both the PTs choice of treatment procedures and their choice of further education.

Female PTs choice of further education in body-mind therapy and treatment of mental

functions in patients with back and neck pain could be seen as part of a caring rationality. They also gave their patients a unique combination of TPs to a higher extent than their male colleagues. This could be an effect of a more holistic thinking and noticing more problem areas among female PTs, as was found in a Swedish study (25). Male PTs preferences for training of joint motion could be seen as influenced by a goal-oriented rationality.

On the other hand there was no difference in female and male PTs in further education in manual methods and acupuncture which indicate that the similarities might be larger than the differences. This is also reflected in that they mostly used the same treatments.

Some methodological aspects should be discussed. Our study was conducted in one county council in Sweden, but the PTs were raised and educated in different areas. Therefore the gender differences found should be generalizeable to the whole country. Depending on how social and cultural aspects influence gender, this kind of study in other societies could produce different results.

The study was a cross-sectional study. Therefore, the choices of treatment procedures during the actual days might not reflect a whole treatment period. The response rate of 69 % was considered acceptable, given the comprehensiveness of the questionnaire. There were significantly more male PTs among the drop-outs than women. However the men in the study were as many as necessary to get reliable results.

The study is one of few looking at PTs' choices of treatment procedures in ordinary

clinic work and they were unaware of the gender analysis when answering the questionnaire. This should strengthen that the results reflects real life situations.

Our result shows that physiotherapists choice of treatment for patients with back and neck pain might be influenced of gendered norms and attitudes, but the field needs to be studied further. It would be interesting to study physiotherapists clinical decision making and interaction with patients in a gender perspective.

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