J Occup Rehabil (2012) 22:78–87
DOI 10.1007/s10926-011-9321-5

Education and Benchmarking Among Physicians May Facilitate Sick-Listing Practice

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Published online: 19 July 2011

Abstract *Introduction* Assessing work ability and sickness certification are considered problematic by many physicians and education and implementation of guidelines to improve knowledge and skills has been requested. Our aim was to study the association between such interventions and physicians' sick-listing practices. *Methods* A web-based questionnaire was sent to all physicians working in primary care, psychiatry, orthopedics/rheumatology in the southern region of Sweden before (in 2007 to 1,063 physicians) and after (in 2009 to 1,164 physicians) educational interventions in insurance medicine were offered. *Results* With a response rate of 58%, half of the physicians (51%) reported to work at a clinic with a sick-listing policy in 2009 compared with 31% in 2007. Primary care physicians (OR 12.4) and physicians who had participated in educational interventions in insurance medicine (OR 2.4) more often had a sick-listing policy at the clinic. Physicians with a longer medical experience (OR 0.7) and those with support at the clinic (OR 0.3) and the possibility to extend time if needed (OR 0.4) were less likely to report of problematic cases while primary care physicians were (OR 2.9). On the contrary, physicians who reported to rarely have the possibility to extend time when handling problematic cases were more likely to issue a higher number of sickness certificates. *Conclusions* The sick-listing process is often viewed as problematic and more often by primary care physicians. Benchmarking and education in insurance medicine together with the possibility to allocate extra time if encountering problematic cases may facilitate sick-listing practice.

Keywords Physicians · Sick-listing · Work ability · Education · Gender

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Introduction

In most western countries physicians are the gatekeepers and the mediators in the insurance health system [1, 2]. Physicians working in primary care, orthopedics, rheumatology and psychiatry frequently deal with sick-listing issues as musculoskeletal or psychiatric disorders are the major causes of sickness absence in Western Europe [2–7]. In Sweden, to receive sick pay after 7 days of sick leave, a sickness certificate based on medical disability is required from the physician. According to Swedish national regulations, sick-listing should be based solely on medical reasons, not on other concerns. In order to issue a sickness certificate, the physician has to form an opinion about the patient's function and ability to work and often other non-medical reasons such as employment reasons, or social

problems contribute to the work inability [8, 9]. However, it is unclear how to measure work ability as it is a complex concept including physical, mental, and social dimensions [10]. Evaluation of work ability also requires knowledge about the patient's work place where physicians most of the time have to rely on patient information [11, 12]. Definition of the work ability concept changes over time and may be influenced by health care practitioners' attitudes and beliefs [4] as well as by political decisions [8, 12]. It is well known that physicians in western countries consider the work ability concept and the sick-listing process as problematic, especially those who work in primary health care [2, 4, 7, 13–15], and primary care physicians, specifically, have expressed the need to acquire more knowledge and skills [16, 17]. It has also been shown that male and female physicians may deal with sick-listing issues differently [18–20].

To facilitate the assessment of work ability and to improve the sick-listing process national guidelines for sickness certification have been requested by physicians [21] and recommended by researchers [17, 20]. Such guidelines have recently been developed and put into practice in Sweden [22].

In the south of Sweden, an ongoing collaboration between the social insurance system and the regional health care authorities has been established in order to facilitate the sick-listing process by introducing guidelines, encouraging networking among the physicians, and offering educational interventions in insurance medicine (www.morse.nu). Beginning in the second half of 2007, this work has systematically intensified. To obtain baseline information of the sick-listing process, a web-based questionnaire was e-mailed in 2007 to all physicians in the region working in primary health care, orthopedics, rheumatology, and psychiatry. In 2009, an identical questionnaire was emailed to obtain follow-up data. We wanted to study if the availability of sick-listing policies, the number of prescribed certificates and if considering the task to assess work ability as problematic had changed between the two surveys and whether participation in an insurance medicine education was associated with these topics.

Materials and Methods

A questionnaire was emailed to all physicians working in primary health care, orthopedics, rheumatology, and psychiatry in the southern part of Sweden (Skåne, population 1,184,500) twice, in May, 2007 and in May, 2009. Both physicians in private and non-private practice were eligible to participate in the study. The questionnaire was web-based and in 2007, 1,063 physicians were approached via e-mail and in 2009, 1,164 physicians were contacted. In 2007, 11 physicians did not have a known e-mail address and therefore, were mailed the questionnaire by regular mail. Three e-mail reminders were sent out during the 5 weeks the web-based questionnaire was open.

The Questionnaire

Based on a literature search and expert consensus, a questionnaire was developed and pilot tested i.e. sent out to ten physicians who returned and commented on the questionnaire for face and content validity. Many questions were based on a previous Swedish report [23]. The questionnaire consisted of three parts. In part one, the physician was asked to self-report on his/her sick-listing behavior (e.g., number of sickness certificates prescribed per week, if the clinic had a sick-listing policy and information concerning the usefulness of national guidelines). In part two, the physician was asked to list the diagnoses of his/her three most recent patients who were sick-listed, the reasons for the sick-listing, and if the physician considered these patients to be problematic cases or not. Finally in part three, statements about supporting processes and potential obstacles in the sick-listing process were listed and the physician was asked to indicate his/her level of agreement on a 5-point Likert scale (strongly disagree (1) to strongly agree (5) with additional "don't know/not applicable" answer).

In 2009, questions concerning insurance medicine education interventions attended in the last 2 years and the usefulness of national guidelines for sickness certification were also included in the first part of the questionnaire. The new questions were pilot tested and appeared to have face and content validity. Analysis of data from the 2007 questionnaire revealed inconsistency in one of the statements in part three which was removed due to lack of understanding.

Educational Interventions in Insurance Medicine

In mid 2007 several efforts to improve the sick-listing process were initiated aiming at increasing knowledge in insurance medicine and sick-listing practice. One focus was on the implementation of local as well as national guidelines for sickness certification. National guidelines were launched in May 2007 and complementary local guidelines in 2008. The introduction of guidelines was combined with half- and full-day seminars with plenary lectures on the major medical diagnoses associated with sick leave (primarily musculoskeletal and psychiatric disorders). In addition, practical seminars with case discussions on physicians' attitudes and roles in the sick-listing process were offered.

Data Analysis

Data from the 2007 questionnaires was only analyzed assessing differences between the two surveys.

From the 2009 questionnaire we wanted to study associated variables with the availability of sick-listing policies at the clinics, the number of prescribed sickness certificates and with considering the task to assess work ability as problematic or not.

Possible associated variables in all analyses were gender, medical specialty, number of years as a physician, working in private or public care, participating in an insurance medicine education or not and reports of experiencing the possibility to extend time for complicated sick-listing cases. The number of issued sickness certificates, having sick-listing policies at the clinics and considering work ability as problematic or not were included as possible associated variables if they were not the dependant variable (Table 1).

For the analyses concerning number of prescribed sickness certificates and considering the task to assess work ability as problematic or not we also included five items (statements) from part three in the questionnaire as possible associated variables. The five statements included were: "The doctor responsible for the patient should assess work ability" and "Other professions (other specialists and health professionals) are supportive in the sick-listing process". Also "In my clinic I have easy access to support if I need to discuss complicated sick-listing cases", "It is problematic to handle sick-listing if you as a doctor have a different opinion than the patient" and "National guidelines for sickness certification is useful for every day clinical work" (Table 1).

Three different regression analyses were performed. To analyze variables associated with the dependant variable "number of prescribed sickness certificates" we used a univariate analysis of variance (ANCOVA). Two logistic regression analyses where the dependant variable was (1) "considering assessing work ability as problematic or not" or (2) "sick-listing policies are present at the clinics or not" (Table 1). Since the variables from part three in the questionnaire had high correlations they were entered into the ANCOVA one at a time.

For descriptive purposes of who were more likely to attend an education in insurance medicine we performed yet another logistic regression analysis including gender,

Table 1 Dependant variables and possible associated variables entered in the analyses

Possible associated variables	Dependant variables		
Items	Sick-listing policies are not present at the clinics versus are present	Number of sickness certificates issued/ week	Experiencing assessing work ability as not problematic versus problematic
Gender	x	x	x
Specialty	x	x	x
Number of years as a physician	x	x	x
Working in private versus public care	x	x	x
Participatin in IME last 2 years, yes/no	x	x	x
Having the possibility to extend time for complicated sick-listing cases, yes/no	x	x	x
A sick-listing policy is present at the clinic, yes/no		x	x
Number of sickness certificates issued/week	x		x
Experiencing assessing work ability as problematic or not	x	x	
"The doctor responsible for the patient should assess work ability" 1–5[a]		x	x
"Other professions (other specialists and health professionals) are supportive in the sick-listing process" 1–5[a]		x	x
"In my clinic I have easy access to support if I need to discuss complicated sick-listing cases" 1–5[a]		x	x
"It is problematic to handle sick-listing if you as a doctor have a different opinion than the patient" 1–5[a]		x	x
"National guidelines for sickness certification is useful for every day clinical work" 1–5[a]		x	x

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[a] Disagree to completely agree

medical specialty, number of years as a physician and working in private or public care.

The statements in part three were analyzed for gender differences by Chi-square tests [24]. A P value of <0.05 was considered as significant.

Results

For both questionnaires, the response rate was 58% (n = 621 in 2007 and n = 677 in 2009) and in total 342 physicians responded to both questionnaires (Table 2). Response/non response analysis showed no differences with respect to age, gender, specialty, or working in a private or public clinic.

The only difference found between the two surveys was in the number of reports stating the presence of a sick-listing policy at the clinic which changed from 31% in 2007 to 51% in 2009 ($P < 0.001$). Also the number of prescribed sickness certificates per week reported by the physicians changed from a mean of 4.4 (range 0–30) in 2007 to a mean of 3.8 (range 0–80) in 2009 ($P < 0.001$) (Table 2).

Physician Characteristics

A small number of the physicians interested in participating were not involved in sick-listing practice and were thus excluded from completing the questionnaire (3% in 2007 and 4% in 2009). Physician characteristics were similar at both occasions in terms of age, sex, the distribution of specialties, and employment status (i.e., public or private care). Half of the respondents were women (n = 308 in 2007 and n = 326 in 2009), and most of the women worked in primary care (70% in 2007 and 69% in 2009, respectively). The number of physicians working in the profession for 10 years or more decreased slightly between the two surveys ($P = 0.004$), no other differences were found in physician characteristics between the two surveys. The distribution of handled diagnoses were similar at both occasions, with musculoskeletal and psychiatric diseases being the most common (four out of ten patients per specialty) and with two out of ten patients having other diseases (Table 2).

Based on the 2009 questionnaire, half of the physicians (51%) had participated in an insurance medicine education during the last 2 years and 55% considered the education as helpful in the sick-listing process (Table 2). Physicians

Table 2 Characteristics of the physicians and their survey responses in 2007 and 2009

	Questionnaire 2007 N 621	Questionnaire 2009 N 677
Specialty		
Primary care, n (%)	394 (63)	409 (60)
Orthopedics/rheumatology n (%)	103 (17)	112 (17)
Psychiatry, n (%)	124 (20)	156 (23)
Sex, men/women, n (%)	313/308 (50/50)	351/326 (52/48)
Age, years, mean (SD)	51 (9.0)	49 (10.8)
≥10 years as specialist, n (%)	473 (76)	450 (66)
Public care employment/private care employment, n (%)	540/81 (87/13)	615/62 (91/9)
Physicians prescribing sickness certificates, n	603	648
No of sickness certificates issued/week, Mean (range)	4.4 (0–30)	3.8 (0–80)
Physicians with a policy for sickness certification present at the clinic, n (%)	187 (31)	328 (51)
Possibility to allocate extra time for complicated sick-listing cases, no/yes, n (%)	228/355 (39/61)	267/358 (43/57)
Education in insurance medicine during the last 2 years, n (%)		331 (51)
The education in insurance medicine was helpful in the sick-listing process, n (%)		182 (55)
Three last patients (part two in the questionnaire), n	1,649	1,765
Patients with psychiatric/musculoskeletal/other diseases[a], n (%)	770/828/315 (40/43/17)	870/871/311 (42/42/16)
Problematic cases when issuing sickness certificates not at all/some/rather/very problematic, n (%)	803/505/249/92 (49/31/15/6)	810/584/266/105 (46/33/15/6)
Sick-listing due to other than medical reasons, such as: waiting time due to referral/social problems/labor market problems/workplace conflicts/other, n (%)[a]	326/281/278/231/66 (20/17/17/16/4)	355/308/235/181/160 (20/17/13/10/9)

[a] More than one choice possible

who had participated in an insurance medicine education were more often primary care physicians (Odds Ratio (OR) 4.3, $P < 0.001$) or psychiatrists (OR 2.5 $P = 0.001$) compared with physicians working in orthopedics/rheumatology. Also, they had more years in practice (OR 1.3, $P < 0.001$) and they more often worked in the public care sector (OR 2.4 $P < 0.001$).

Sick-Listing Policies

In the 2009 survey 51% of the physicians stated that they had a sick-listing policy at their clinic compared with 31% in 2007 ($P < 0.001$). This difference in clinics having a sick-listing policy was primarily only noted among physicians working in primary care. This was also supported by the logistic regression analysis of the 2009 data, showing that it was more likely to have a sick-listing policy if you were working in primary care (OR 12.4, $P < 0.001$) and if reports of participation in an insurance medicine education were present (OR 2.4, $P = 0.001$). Physicians working in private care were less likely to have a sick-listing policy at their clinics (OR 0.3, $P = 0.001$) compared with those working in public care, please see Table 3.

Number of Prescribed Sickness Certificates

For physicians working in primary care, the mean number of patients, per physician, who received a sickness certificate per week was in 2007: 3.5 (range 0–25) and in 2009: 2.4 (range 0–15). For physicians working in orthopedics/rheumatology the corresponding numbers were: 7.4 (range 0–30) in 2007 and 7.2 (range 0–34) in 2009, and for physicians working in psychiatry: 4.7 (range 0–30) in 2007 and 5.4 (range 0–80) in 2009. Only in the group of primary care physicians was this change statistically significant ($P < 0.001$ vs. 0.9 and 0.8, respectively). Both in 2007 and 2009, female physicians prescribed fewer sickness certificates per week than did male physicians (in 2007: men mean 5.3 SD 5.3 vs. women mean 3.4 SD 3.3 and in 2009: men mean 4.6 SD 6.1 vs. women 2.9 SD 4.0, $P < 0.001$ in both surveys).

Analyzing data from the 2009 survey with the number of prescribed sickness certificates as the dependant variable (ANCOVA) we found that female physicians (parameter estimate (B) −1.07, $P = 0.01$) and physicians working in primary care (B −4.02, $P < 0.001$) issued fewer sickness certificates compared with male physicians and physicians

Table 3 Results from the two logistic regression analyses presented with odds ratio (OR) and 95% confidence interval (CI)

Possible associated variables	Dependant variables	
Items	Sick-listing policies are not present at the clinics versus are present, n 436, OR (95% CI)	Experiencing assessing work ability as not problematic versus problematic, n 520 OR (95% CI)
Female	1.2 (0.74; 2,0)	0.7 (0.5; 1.2)
Male	1	1
Physicians working in		
Primary care	12.4 (6.0; 25.6)***	2.9 (1.5; 5.4)***
Psychiatry	1.3 (0.6; 3.0)	1.9 (0.97; 3.9)
Orthopedics/rheumatology	1	1
Number of years as a physician	1.0 (0.8; 1.3)	0.7 (0.6; 0.9)***
Working in private care versus public care	0.3 (0.1; 0.6)***	1.2 (0.6; 2.2)
	1	1
Participation in IME last 2 years versus no participation in IME	2.4 (1.5; 3.9)***	0.9 (0.6; 1.4)
	1	1
Having the possibility to extend time for complicated sick-listing cases versus no possibility to extend time	0.8 (0.4; 1.3)	0.4 (0.3; 0.6)***
	1	1
A sick-listing polic at the clinic versus no sick-listing policy	–	0.95 (0.6; 1.6)
		1
Number of sickness certificates issued/week	1.0 (0.9; 1.0)	1.0 (0.97; 1.0)
Assessing work ability is problematic versus not problematic	0.9 (0.5; 1.4)	–
	1	

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*** $P \leq 0.001$

working in any other studied specialty. On the contrary, we found that those who stated that they never or seldom had the possibility to extend time for complicated sick-listing cases issued a higher number of sickness certificates (B 0.9, $P = 0.053$) compared with those who considered themselves to sometimes or often have the possibility to extend time for complicated sick-listing cases (Table 4).

Including the statements from part three in the questionnaire showed that those who did not at all agree (1 on a 1–5 scale) with the statement "It is problematic to handle sick-listing if you as a doctor have a different opinion than the patient" issued a higher number of sickness certificates (B 5.76, $P < 0.001$) compared with those who agreed more with the statement. No other variables showed a statistical significant association to the number of prescribed sickness certificates.

Reports of Problematic Cases

Referring to the last three sick listed patients, half of the cases (54%) were considered as somewhat, rather, or very problematic cases when assessing work ability. Sick-listing because of a non-medical reason was just as common in both the 2007 and the 2009 survey. Non medical variables contributing to sick-listing were waiting time due to referral, social problems, labor market problems, or workplace conflicts (Table 2).

In the logistic regression analysis, being a primary care physician was associated with experiencing problematic cases when assessing work ability (OR 2.9, $P = 0.001$). Physicians who had more years in the profession and who had the possibility to extend time for complicated sick-listing cases were less likely to report problematic cases when assessing work ability (OR 0.7, $P = 0.01$ and OR 0.4, $P < 0.001$, respectively) (Table 3). Including statements from part three in the analysis yielded that physicians were less likely to report problematic cases when assessing work ability if they agreed with the statement that the doctor responsible for the patient should assess work ability (4–5 on a 1–5 scale, OR 0.4–0.5, $P = 0.02$–0.06) and also to have support at the clinic to discuss complicated sick-listing cases (2–5 on a 1–5 scale, OR 0.3–0.4, $P = 0.02$–0.05). No other question showed a statistical significant association with the dependant variable experiencing problematic cases or not.

In 2009 female primary care physicians were less likely to agree to the statement "The doctor responsible for the patient should be the one who assessed work ability" than their male counterparts ($P = 0.009$). This was also true for the statement "Other professions (other specialists and health professionals) are supportive in the sick-listing process" which were more often supported by female physicians ($P < 0.001$). We also found gender differences where female physicians agreed with the statement "It is problematic to handle sick-listing if you as a doctor have a different opinion than the patient" compared with male physicians ($P = 0.004$). All results remained when controlled for professional years, specialty and gender.

Discussion

In our repeated survey based on information from physicians working in primary care, psychiatry, orthopedics/rheumatology, a larger percentage of the physicians reported to work at a clinic with a sick-listing policy in our second survey. We also found reports of a lower number of prescribed sickness certificates 2 years later. Physicians working in primary care and those who had participated in an insurance medicine education in the time-period between the two surveys more often had a sick-listing policy at the clinic. Neither the presence of a sick-listing policy or participation in insurance medicine education were associated with the number of prescribed sickness certificates or with reports of experiencing problematic cases or not when assessing work ability. However, physicians who had more years in the profession, who had support at the clinic and those who had the possibility to extend time if they encountered a problematic case were less likely to report of problematic cases. On the contrary, physicians who reported to rarely have the possibility to extend time when handling problematic cases and physicians who did not report any problematic cases were more likely to issue a higher number of sickness certificates. A lower number of sickness certificates were associated with physicians working in primary care and with female physicians.

There is a general interest among physicians in western countries to learn more about insurance medicine [4, 12, 23]. This fits well with our results from the Skane region in Sweden, where every other physician had spent at least half a day to improve their competence in insurance medicine; half of these physicians stated that the education was helpful in the sick-listing process. Five out of ten physicians reported to work at a clinic with a sick-listing policy in our second survey compared with three out of ten in the survey performed 2 years earlier. During these years, both the regional and the national Health Service have implemented guidelines for sickness certification. In a recent national Swedish survey that included 61% of all Swedish physicians (n = 22,498), only 20% worked at a clinic with a sick-listing policy [23]. We found that participation in insurance medicine education made it twice as likely to also work in a clinic with a sick-listing policy in 2009. It appears the Skane region has been proactive in terms of implementing guidelines by educational interventions in insurance medicine.

Table 4 Results from the ANCOVA performed on number of issued sickness certificates presented with parameter estimate (B) and 95% confidence interval (CI)

Possible associated variables Items	Dependant variable Number of sickness certificates issued/week, n 529 B (95% CI)
Female	−1.1 (−1.9; −0.2)**
Male	0
Physicians working in	
Primary care	−4.0 (−5.3; −2.7)***
Psychiatry	−1.3 (−2.8; 0.1)
Orthopedics/rheumatology	0
Number of years as a physician	0.03 (−0.5; 0.4)
Working in private care versus public care	0
	−0.2 (−1.7; 1,2)
Participation in IME last 2 years versus no participation in IME	0
	−0.3 (−1,2; 0.6)
Having the possibility to extend time for complicated sick-listing cases versus no possibility to extend time	0
	0.9 (−0.01; 1.8)*
A sick-listing policy at the clinic versus no sick-listing policy	0
	0.5 (−0.4; 0.5)
Number of sickness certificates issued/week	–
Assessing work ability is problematic versus not problematic	0
	−0.2 (−1.1; 0.6)

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* $P \leq 0.05$; ** $P \leq 0.01$; *** $P \leq 0.001$

The use of guidelines may lead to earlier return to work [25] and physicians familiar with the guidelines believed the overall effect to be positive [21, 26]. Implementation of guidelines to help physicians in the sick-listing process can be one way to guide physicians when they are making decisions related to work assessment and sick listing [13, 17, 20]. However, in our study we did not find any associations between physicians with sick-listing policies present at the clinic and the number of prescribed sickness certifications or reports of experiencing problematic cases or not. But in line with a previous report, physicians with a common policy or guidelines at the clinic were more often found working in primary care where access to support at the clinic has been found to be more readily available [2]. Support at the clinic, the possibility to allocate more time if needed and a longer experience as physician were in our study associated with less reports of problematic cases when assessing work ability. This emphasizes the need of networking or benchmarking as one form of education. Still, primary care physicians tend to find the sick-listing process more problematic than physicians in psychiatry and in orthopedics/rheumatology. Implementation of the recently developed national guidelines will have to be studied further after a longer period of time.

We found reports of a lower number of prescribed sickness certificates per week in our second survey. In our analysis we looked for associations between physicians who had attended an educational intervention in insurance medicine and those who had not in number of prescribed certificates since it has been described in earlier studies that educational interventions based on discussions and reflective interaction may change physician's practice [27, 28]. We did however, not find any such association and this change was probably due to a new health care policy adopted in 2008 in Sweden.

The sick-listing process is problematic according to the physicians who participated in our study, and in four out of ten cases this is primarily related to non-medical reasons. This finding is in line with previous research revealing sick-listing to be perceived as a psychosocial work problem among Swedish physicians [20, 21]. According to Swedish national regulations, sick-listing should be based solely on medical reasons and not be based on other concerns, such as referrals and waiting lists, employment reasons, or social problems as found in this study. In qualitative studies, all these factors have been expressed as barriers to good sickness certification [8, 9, 21]. This inconsistency needs to be solved on a management level, in the social insurance system, or in society and cannot be eradicated by educating physicians [9], which is in line with information found in our study.

Furthermore, to improve the assessment of patients' work ability, physicians also need information about patients' work places, information which is often problematic for physicians to obtain and validate [2]. Other health professionals, such as physiotherapists and occupational therapists, can assist the physician in work ability assessments which is appreciated by some physicians

[12, 16] but not by others [8]. Knowledge and skill development in work ability assessment may be one way to promote equal treatment and assessment of patients [29] and a collaboration between occupational health and primary care might have a role to further improve sick-listing practices [17, 30]. Lack of collaboration and communication with other health care professionals in the sick-listing process has been reported [30, 31]. In our study we found differences between genders, where female physicians seemed to be more positive towards cooperation with other professionals in assessing work ability.

It is well known that primary care physicians more often find sick-listing practice as problematic compared with other physicians [2, 15, 17, 20, 30]. General practitioners in primary care issue fewer sick-listing certificates compared with, for example, orthopedic surgeons who more often meet patients eligible for sick-listing [15]. This is also in accordance with our findings, where the physicians in primary care reported more problematic sick-listing cases than the other specialists did, even though the latter ones issued more sick-leave certificates. However, we do not know about the duration of the certificates, the difference could be due to certificates of shorter duration leading to a larger number issued by the orthopedic surgeons. Or general practitioners may encounter more problematic cases as they handle a wide range of diseases as reflected in this study. General practitioners may also perceive themselves to take care of the whole patient, rather than a sick or hurt body part [20].

Psychiatrists, orthopedic surgeons, and rheumatology physicians are more likely to meet a patient who has been referred from a general practitioner with a specific musculoskeletal or psychiatric problem, potentially explaining the lower number of problematic cases reported by these specialists. Also, physicians who see referred patients may choose to only give a statement about the actual medical condition and leave the primary care physician to handle the sick-listing [30]. General practitioners also express that other specialties may abandon patients who need sick-listing to them [30]. To minimize this problem, other specialists could advise the primary care physician regarding the need of sick-listing [32]. Additional research is needed on why general practitioners find sick-listing more problematic than other specialties.

Research on gender differences and potential gender bias in medical management is still limited [33]. The study questionnaire was sent to all physicians working in primary care, orthopedics, rheumatology and psychiatry in the south of Sweden. The distribution of male and female physicians in our study is representative of Swedish physicians in general (The Swedish Medical Association 2010). However, some differences between responding male and female physicians were found. Within primary care, the proportion of female physicians was larger, 69%, compared to studies by Englund in 2000 where approximately 40% of the physicians were female [18], by Arrelöv in 2007 where 52% were female, [2] and by Swartling in 2007 where the proportion of female physicians was 55% [20]. The result may indicate a gradual change with a greater proportion of female physicians working in primary care.

Female physicians found it more problematic to handle sick-listing if they as doctors had a different opinion than the patient. Previous studies have identified physicians' difficulties to combine the two roles of being patients' advocate and a medical expert simultaneously [20, 21, 30]. In our 2009 survey, female physicians reported fewer prescribed sickness certificates than male physicians did. Englund found in 2000 that female physicians prescribed sickness certificates more frequently when presented with a case vignette than did male physicians [18]. There have also been findings of no difference between genders in prescribing sickness certificates by Norrmen in 2006 [19]. Differences in results between these 2 studies may be due to methodological differences, including differences in sample size (299 vs. 28 female physicians included in the 2 studies, respectively). In our study, we have information from 326 female physicians in 2009. To better understand this phenomenon, there is a need for larger studies on gender differences in medical management and sick-listing practice with designs that allow for gender comparisons, both in terms of the physician's and the patient's gender, and the interaction between them.

Limitations

Given our response rate of 58%, our results should be interpreted with caution as they may not be widely generalizable. Analysis of non respondents, however, showed no differences with respect to characteristics such as age, sex, being a specialist, or if the clinic was in the private or public sector. Furthermore, our sample is similar when comparing age and sex of the participants to the sample in a questionnaire study (including 5,455 Swedish physicians) performed by Löfgren et al.[15], which might imply that our sample reflect a similar cohort.

Since this study concerns two cross sectional studies 2 years apart, using the same questionnaire, targeting the same population in the same area we know nothing of the causal relationship between the dependant and the possible associated variables. Only half of the respondents attended both surveys why we in this study chose to analyze data mainly from the 2009 questionnaire.

Our study is based on self-reported data that were not validated. Thus, it is possible that a social desirability bias has been introduced. However, we know of no reason why

a potential social desirability bias would be different between male and females physicians. Most likely a possible underestimation will affect both surveys to a similar degree.

One limitation may be the lack of a full validity and reliability test of the questionnaire. It was only pilot tested and slightly adjusted before the 2009 survey but we consider the questionnaire to have achieved face and content validity. We have received very few comments from the responders concerning problematic items but of course a lager validation would strengthen the results.

Conclusions

Physicians working in primary care and those who had participated in educational interventions in insurance medicine more often had a sick-listing policy at the clinic. The sick-listing process is often viewed as problematic, probably due to the vague work ability concept and high frequency of non-medical issues that still are considered by physicians in the sick-listing process. Differences were found among investigated specialties as well as between genders. Physicians working in primary care may need extra support in this problematic task. Benchmarking and education in insurance medicine together with the possibility to allocate extra time if encountering problematic cases may facilitate sick-listing practice.

Acknowledgments Thanks to all physicians who answered the questionnaire. We would also like to thank Louise Roberts and Ronny Wain for excellent technical support with the web based questionnaire and Ulf Hallgårde for valuable input and support.

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