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Association between satisfaction and stress with aspects of job and practice management among primary care physicians

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ABSTRACT

Background Reforms introduced in the last decade in Italian general practice, have contributed to the changing role of primary care physicians (PCPs) within the Italian National Health Service, with potential difficulties adapting that may lead to job stress and dissatisfaction. The present study aims to compare job satisfaction and stress levels of PCPs working in primary healthcare teams (PHCTs) with those for practitioners operating in single ambulatory offices, and to assess potential associations with aspects of job and practice management.

Method A postal survey was conducted between January and March 2005 among PCPs working in Tuscany. Data were collected by using a structured questionnaire containing questions concerning personal, professional, job and practice characteristics. The Warr–Cook–Wall scale and the Cooper test were used to assess job satisfaction and stress, respectively.

Results From 3043 PCPs, a response rate of 45.2% was achieved. Significant differences were found between PHCT physicians and solo practitioners in several aspects of their job. Physicians working in PHCTs appeared more satisfied in some aspects of their practice such as organisation, whereas they were less satisfied about workload and interaction with other healthcare providers. Multivariate modelling showed relevant aspects of dissatisfaction and stress, particularly the difficulties of collaboration with other healthcare providers, and access to specialised services.

Conclusion Reform strategies aimed at improving the quality of care among PCPs needs to take into account the contextual determinants of physician satisfaction and stress, and should highlight programmes that might be pursued to improve the integration of PCPs within the Italian National Health System.

Keywords: cross-sectional survey, healthcare systems, job satisfaction, primary care, primary care teams

How this fits in with quality in primary care

What do we know?
Reform to the Italian healthcare system has seen a move to general practitioners working in primary healthcare teams.

What does this paper add?
This study showed that doctors working in primary healthcare teams in Italy appeared more satisfied with organisation aspects of practice, but less satisfied with workload and interaction with other healthcare providers, particularly in relation to the difficulties of collaboration with other healthcare providers, and access to specialised services.

Introduction

Understanding trends in job satisfaction among primary care physicians (PCPs) and how changes in practice environment affect their work is important for several reasons. First, dissatisfied PCPs are more likely to leave the profession and they might also discourage others from entering.[1,2] Secondly, job satisfaction may affect the quality of care among PCPs, with potential influence on the patient–physician relationship and ultimately on patients' health outcomes.[3] Finally, job dissatisfaction might be one manifestation of PCPs' perception of obstacles in delivering high-quality care to their patients.[4]

Most PCPs in Italy are self-employed, contracting with the National Health Service (NHS) to provide general medical services (GMS) through the national standard contract, which comprises a mix of capitation and financial incentives. Such incentives are mostly supplied in order to reduce the number of tests, treatments and specialist referrals. A growth in the number of PCPs is also encouraged through financial incentives to adhere to health plans' clinical practice guidelines.[5]

Moreover, during the last decade, the tendency of policy makers to transfer into primary care several healthcare services that were originally provided at the hospital level, has contributed to a profound transformation of the PCP's role within the Italian NHS, resulting in the introduction of primary healthcare teams (PHCTs). This has been supported by several studies that have demonstrated that a team-oriented culture in general practice was associated with better process of care for patients with diabetes[6] and hyperlipidemia,[7] better continuity and access to care, and greater patient satisfaction,[8] suggesting PHCTs as a possible solution to improve the quality of care and reduce healthcare costs.[6–10]

Nevertheless, medical practitioners today find themselves caught in an intense crossfire between involvement of the local health authorities (LHAs) in the organisation for developing projects aiming to constrain the growing costs of health care, and their own medical activities of patient care, which may lead to potential job stress and dissatisfaction.[1,11]

To the best of our knowledge, few studies have evaluated the degree of PCPs' job satisfaction and stress in the context of the current challenges of the Italian NHS, and in relation to other variables such as the development of PHCTs, changes in workload, and increasing integration with other healthcare providers within the LHA.

We conducted a study to evaluate job satisfaction and stress among GPs practicing in Tuscany (Italy) and investigated potential differences among physicians working in teams compared with those operating from single ambulatory offices. We also assessed whether job satisfaction and stress were associated with aspects of job and practice management in the two categories of physicians.

Method

Data collection

A postal survey of PCPs was carried out between January and March 2005. A structured questionnaire was sent on two separate occasions to every PCP in Tuscany, a region of central Italy. The list of physicians was provided by the 12 LHAs of Tuscany, which maintain an updated registry of the PCPs actually practising within each LHA.

The questionnaire asked about personal and professional characteristics (demographics, area of practice, years of practice, postgraduate qualifications, and involvement in other professional activities), job characteristics (number of patients and their age distribution, workload) and practice characteristics (link to primary care teams, presence of nurses and administrative staff, logistic characteristics of the outpatient ambulatory clinics). Finally, doctors were asked their opinion about the level of collaboration with other healthcare providers within the LHA, as well as with

other specialists, hospital doctors and laboratory technicians.

Outcome measures

Two scales were used to examine job satisfaction and work stress. The shortened version (10-item) Warr–Cook–Wall job satisfaction scale was used to measure job satisfaction.[12] Each item is rated on a seven-point scale where 1 = extreme dissatisfaction and 7 = extreme satisfaction. The reliability and validity of the scale have been evaluated, and it has been extensively used in several surveys from different countries.[1,13,14]

The work stress inventory for PCPs consisted of 38 items accompanied by a five-point rating scale ranging from 1 = no pressure to 5 = high pressure. In this survey, we used a 14-item version developed by Cooper *et al* and used in other studies.[15] This version is mainly focused on patients' expectations, medical responsibilities, workload and relationship between work and private life.

Statistical analysis

Standard descriptive statistics were used to detect differences between PCPs practising in PHCTs and those from single-handed practices. We then constructed two multivariate linear regression models to examine the association between physician characteristics, job satisfaction and stress.

The aim of the regression analyses was to identify those elements that characterise PCPs' adherence to PHCTs and see how this is associated with satisfaction and stress scores.

The dependent variables were based on measurements using the Warr–Cook–Wall and Cooper scales from all responding physicians. Covariates (other predictors) were included in the final models when the P value in question was <0.05 in the univariate analysis.

To adjust for differences caused by non-response, a weight, calculated as the inverse of the probability of response within each LHA, was used in the linear models, thus providing estimates attributable to the whole region. All analyses were performed using STATA 8.0 (STATA Corporation, College Station, Texas, USA). Statistical significance was set at $P < 0.05$.

Results

Usable questionnaires were received from 1376 PCPs, with a response rate of 45.2%. Responders were homogeneously distributed across each LHA of Tuscany (range: 37.5–53.2%). The response rate of PCPs did not significantly vary according to urbanisation, with 46.8% of those PCPs practising in less urbanised areas (i.e. $\leq$30 000 inhabitants) and 43.8% of those practising in urbanised areas (i.e. >30 000 inhabitants) responding. Women PCPs were significantly ($P < 0.0001$) less frequent among responders (16.6%) compared to non-responders (27.2%); conversely, both responders and non-responders were similar in age (mean, standard deviation (SD): 51.1 $\pm$ 10.9 versus 51.7 $\pm$ 6.1, respectively).

Table 1 provides descriptive statistics of respondent PCPs' jobs and practices, and the self-reported degree of collaboration with other healthcare providers, stratified by formal links to PHCTs. There was no significant difference in personal characteristics between PHCT and non-PHCT PCPs, except for mean years of practice, which was significantly ($P < 0.0001$) higher in PHCT-linked PCPs. Conversely, solo practitioners had a significantly lower workload, in terms of both total numbers of patients ($P < 0.0001$) and number of working hours per week ($P < 0.05$). They were also less likely to employ nurses (6.6% versus 17.7%) or administrative staff (20.8% versus 57.0%) within their surgeries, and less likely to use diagnostic instruments (28.2% versus 41.8%) and information technology (63.7 versus 93.6%) in their clinical practice, compared to PCPs working in PHCTs.

Overall, a high proportion of PCPs reported a good relationship with other healthcare providers within LHAs, ranging from 69.6% with social workers to 89.1% with laboratory technicians. However, most of them reported difficulties in referrals to specialists and around 30% difficulties in hospitalising their patients. Finally, we estimated the income of PCPs. There was a significantly higher prevalence of PCPs with an income of €60 000 or more among PHCT-linked physicians compared with single-handed physicians (76.0% versus 42.2%).

Job satisfaction

Table 2 shows the mean scores for each dimension on the Warr–Cook–Wall job satisfaction scale. Compared with colleagues practising in single-handed surgeries, physicians linked to PHCTs were significantly more satisfied with their remuneration ($P < 0.001$), the recognition they got for good work ($P < 0.05$), the opportunity to use their clinical abilities ($P < 0.05$) and their physical working conditions ($P < 0.05$). Conversely, they were less satisfied with their hours of work ($P < 0.05$), job variety ($P < 0.05$) and interaction with colleagues and fellow workers ($P < 0.05$). When the sources of job satisfaction were ranked in ascending order, no relevant differences were shown between PHCT and single-handed physicians.

Table 1 Characteristics of respondent GPs, their jobs and practices, stratified by adherence to primary healthcare teams

Characteristics	Primary healthcare teams		Total	*P* value
	No ($n = 766$)	Yes ($n = 610$)		
Personal characteristics				
Sex (females), *n* (%)	131 (17.1)	98 (16.1)	229 (16.6)	0.608
Mean age (years (SD))	51.1 (10.7)	51.1 (11.1)	51.1 (10.9)	0.251
Area of practice				0.334
≤30 000 inhabitants, *n* (%)	388 (50.7)	293 (48.0)	681 (45.1)	
>30 000 inhabitants, *n* (%)	378 (49.3)	317 (52.0)	695 (50.5)	
Specialist's degree, *n* (%)	457 (60.1)	414 (68.4)	871 (63.8)	0.002
Involved in other professional activities, *n* (%)	208 (28.0)	143 (24.3)	351 (26.3)	0.130
Mean (SD) years of practice	18.8 (9.5)	20.8 (7.5)	19.7 (8.8)	<0.0001
Job characteristics				
Number of patients, mean (SD)	1036 (461)	1246 (331)	1130 (421)	<0.0001
Number of patients of 75+ years, mean (SD)	162 (119)	200 (109)	179 (116)	0.028
Working hours/per week, *n* (%)				0.001
<30	653 (86.2)	478 (78.4)	1131 (82.2)	
≥30	113 (14.8)	132 (21.6)	245 (19.8)	
Visits for clinical purposes/per week, mean (SD)	61.4 (59.1)	71.1 (47.3)	65.8 (54.3)	<0.0001
Visits for administrative purposes per week, mean (SD)	86.4 (88.2)	99.0 (73.4)	92.1 (82.0)	<0.0001
Referrals for specialist visits per 100 visits, mean (SD)	9.2 (9.5)	9.5 (8.0)	9.4 (8.8)	<0.0001
Referrals for diagnostic procedures per 100 visits, mean (SD)	21.1 (29.5)	23.4 (23.7)	22.1 (27.0)	<0.0001
Referrals for hospitalisation per 100 visits, mean (SD)	0.7 (1.4)	0.6 (0.8)	0.7 (1.2)	<0.0001
Practice characteristics, *n* (%)				
GPs with nurses	50 (6.6)	108 (17.7)	158 (11.5)	<0.0001
GPs with administrative staff	157 (20.8)	348 (57.0)	505 (26.7)	<0.0001
GPs with instrumental diagnostic tools	216 (28.2)	255 (41.8)	471 (32.4)	<0.0001
GPs using information technology for their practice	483 (63.7)	571 (93.6)	1054 (76.6)	<0.0001
Collaboration with other healthcare providers[a]				
Specialists	612 (79.9)	460 (75.4)	1072 (77.9)	0.127
Hospital doctors	568 (74.1)	414 (67.9)	982 (71.3)	0.013
Laboratory technicians	694 (90.6)	539 (88.3)	1233 (89.1)	0.123
Ambulatory nurses	546 (71.2)	480 (78.7)	1026 (74.6)	<0.0001
Officers from the local health authority	656 (85.6)	526 (86.2)	1182 (85.9)	0.357
Social workers	545 (71.2)	413 (67.7)	958 (69.6)	0.123
Difficulties in specialist referral	574 (74.9)	491 (80.5)	1065 (77.4)	0.033
Difficulties in hospitalisation	230 (30.3)	182 (29.8)	412 (29.9)	0.106
Income, *n* (%)[a]				<0.0001
≤€60 000	443 (57.8)	143 (23.4)	586 (42.6)	
>€60 000	323 (42.2)	467 (76.6)	790 (57.4)	

SD: standard deviation
[a] GPs declared enough/good relationship with the different healthcare providers

Table 2 Mean (standard deviation) score for Warr–Cook–Wall job satisfaction scale, stratified by adherence to primary healthcare teams

Issues	No, $n = 766$		Yes, $n = 610$		Mean difference (95% CI) – Yes versus No
	Score	Rank	Score	Rank	
Rate of pay	3.2 (1.5)	10	3.5 (1.5)	10	0.27 (0.43 to 0.11)[a]
Hours of work	4.1 (1.9)	6	3.9 (1.5)	6	–0.19 (–0.36 to –0.03)[b]
Recognition for good work	5.3 (1.1)	1	5.5 (1.2)	1	0.11 (0.01 to 0.22)[b]
Opportunity to use abilities	4.9 (1.4)	4	5.1 (1.3)	3	0.20 (0.05 to 0.35)[b]
Choose own method of working	5.0 (1.3)	3	5.0 (1.3)	4	0.05 (–0.09 to 0.18)
Amount of variety in job	3.8 (1.5)	8	3.7 (1.5)	8	–0.03 (–0.19 to 0.12)
Physical working condition	5.2 (1.4)	2	5.4 (1.3)	2	0.14 (0.01 to 0.29)[b]
Amount of responsibility given	3.6 (1.6)	9	3.6 (1.6)	9	–0.03 (–0.21 to 0.13)
Colleagues and fellow workers	4.0 (1.4)	7	3.8 (1.4)	7	–0.17 (–0.32 to –0.01)[b]
Overall satisfaction	4.8 (1.3)	5	4.9 (1.3)	5	0.07 (–0.06 to 0.21)

CI confidence interval
[a] t test: $P < 0.001$
[b] t test: $P < 0.05$

Job stressors

Table 3 summarises PCPs' level of stress in relation to 14 job stressors. Each stressor was ranked in ascending order of importance and the ranks compared between PHCTs and solo practitioners. Although with some differences in scores, the top five stressors, such as dealing with the terminally ill and their relatives, and unrealistic expectations of others, were similar in both PCP groups. Among those stressors associated with non-medical issues, female practitioners declared a statistically significantly ($P < 0.05$) higher rate of stress for dividing time between work and family (3.66 versus 3.52), and disturbance of home/family life by GP work (3.78 versus 3.65). The most relevant differences between PHCTs and single PCPs were found for worrying about patient complaints (3.45 versus 3.32), interruptions by emergency calls during surgery (3.53 versus 3.35) and adverse publicity in the media (3.64 versus 3.44).

Regression analysis

Table 4 shows the results of the regression analyses performed for job satisfaction and stress. When all potential covariates were included, links with PHCTs did not show any significant association with outcomes. Instead, job satisfaction was positively associated with a high number of patients (>1400) per PCP, presence of instrumental-diagnostic tools within the practice, and, overall, a good degree of collaboration with other healthcare providers. A significantly lower job satisfaction ($P < 0.0001$) was associated with PCPs who self-declared difficulties in both specialist referrals and hospital admission.

Lower job stress was associated with greater collaboration with ambulatory nurses ($P = 0.072$) and officers from LHAs ($P = 0.057$), although this did not reach significance, whereas difficulties in specialist referral and hospital admission were associated with a significant increase in job satisfaction ($P < 0.05$). Unexpectedly, PCP income over €60 000 was associated with a significant increase in job stress.

Discussion

Results from this survey indicate that 67.1% of PCPs were satisfied with their current role, although 69.1% reported sources of job stress. Multivariate modelling showed that job dissatisfaction and stress were associated

Table 3 Mean (standard deviation) score for Cooper job stress scale, stratified by adherence to primary healthcare teams

Issues	No, $n = 766$		Yes, $n = 610$		Mean difference (95% CI) – Yes versus No
	Score	Rank	Score	Rank	
Dealing with problem patients	3.30 (0.8)	9	3.36 (0.7)	9	0.06 (–0.03 to 0.14)
Worrying about patient complaints	3.32 (0.9)	8	3.45 (0.8)	8	0.13 (0.04 to 0.22)[a]
Dividing time between work and family	3.53 (0.9)	3	3.57 (0.9)	5	0.04 (–0.05 to 0.14)
Unrealistic expectations of others	3.52 (0.3)	4	3.57 (0.3)	5	0.05 (–0.03 to 0.14)
Disturbance of home/family life by GP work	3.68 (0.3)	1	3.65 (0.4)	2	–0.03 (–0.13 to 0.07)
Interruptions by emergency calls during surgery	3.35 (1.0)	7	3.53 (1.0)	7	0.17 (0.06 to 0.28)[a]
24 h responsibility for patients' lives	3.45 (1.3)	5	3.58 (1.2)	4	0.13 (–0.01 to 0.27)
Finding a locum	3.25 (1.3)	10	3.03 (1.3)	11	–0.22 (–0.36 to –0.08)
Adverse publicity in the media	3.44 (1.2)	6	3.64 (1.2)	3	0.20 (0.07 to 0.33)[a]
Arranging hospital admission	2.81 (0.8)	12	2.87 (0.8)	12	0.06 (–0.02 to 0.14)
Dealing with the terminally ill and their relatives	3.61 (0.8)	2	3.70 (0.8)	1	0.09 (0.01 to 0.17)[a]
Night visits	3.21 (0.6)	11	3.28 (0.5)	10	0.06 (0.01 to 0.12)[a]
Working environment (e.g. surgery set-up)	2.68 (0.9)	13	2.77 (0.9)	13	0.08 (–0.01 to 0.18)
Fear of assault during visits	1.65 (0.8)	14	1.67 (0.8)	14	0.02 (–0.06 to 0.11)

CI: confidence interval
[a] *t* test: $P < 0.05$

with poor collaboration with other healthcare providers, and lack of access to specialised services.

These findings are consistent with research from other countries, where PCPs during the period 1990–2000 encountered several reform initiatives aimed at changing the organisation of general practice, such as accreditation, vocational registration, and the introduction of PHCTs. The Canadian Medical Association, in a recent survey,[16] reported physician dissatisfaction within its membership and concerns about patients' access to specialised services and procedures. A UK survey found that PCPs' satisfaction decreased after imposition of a new contract with the government in 1990, a contract that forced physicians into new working relationships and a perceived increase in their workload. By 1998, their level of satisfaction had partially recovered,[17] until 2001 when it decreased again. However, in 2004, when the latest GMS contract was implemented, levels of satisfaction had returned to their 1998 values.[18,19]

Among Dutch general PCPs,[20] satisfaction was positively associated with openness to patients and attention to the psychosocial aspects of patients' complaints, but also with an easy referrals to medical specialists, while dissatisfaction was associated with

Table 4 Multivariate linear regressions of potential predictors for job satisfaction and stress

Characteristics[a]	Job satisfaction[b]			Job stress[c]		
	β-coefficient[d]	95% CI	*P* value	β-coefficient[d]	95% CI	*P* value
Constant	3.42	2.94 to 3.90	<0.0001	3.51	3.16 to 3.87	<0.0001
Job characteristics						
Number of patients >1400 (≤1400)	0.14	0.05 to 0.22	0.001	–	–	–
Practice characteristics						
GPs with instrumental diagnostic tools (absence)	0.20	0.11 to 0.28	<0.0001	–	–	–
GPs using information technology for their practice (absence)	–	–	–	0.07	0.005 to 0.14	0.035
Contacts with the local health authority						
>2.5/months with the medical officer	0.15	0.07 to 0.24	<0.0001	–	–	–
Collaboration with other healthcare providers (not enough)						
Specialists	0.32	0.20 to 0.44	<0.0001	–	–	–
Hospital doctors	0.25	0.15 to 0.36	<0.0001	–	–	–
Ambulatory nurses	–	–	–	–0.14	–0.29 to 0.012	0.072
Any officer from the local health authority	0.21	0.08 to 0.35	0.002	–0.09	–0.17 to 0.003	0.057
Social workers	0.19	0.09 to 0.29	<0.0001	–	–	–
Difficulties in specialists referrals (none)	–0.28	–0.38 to –0.18	<0.0001	0.20	0.14 to 0.27	<0.0001
Difficulties in hospital recovery (none)	–0.08	–0.18 to 0.003	0.059	0.06	0.002 to 0.12	0.042
Income >€60 000 (<€60 000)	–	–	–	0.08	0.03 to 0.14	0.002

CI: confidence interval
All factors were introduced in the model in the light of their statistical significant ($P < 0.05$) in univariate analysis
[a] In parentheses the baseline values for each considered variable
[b] F test (all considered variables): (19,1355) = 15.05; adjusted $R^2 = 0.1743$
[c] F test (all considered variables): (11,1353) = 8.30; adjusted $R^2 = 0.0556$
[d] Adjusted for those variables included in the table where values are shown

increased prescribing and tendency to provide fewer explanations to patients.

Three main findings emerge from this study. First, characteristics of PCPs linked to PHCTs and single-handed physicians differed with regard to several aspects of their work, in particular workload and organisation of their practice. Practitioners working in PHCTs were significantly more likely to be satisfied with pay and organisational aspects of their practice, whereas they were more likely to be dissatisfied with hours of work and integration of work with other colleagues. In multivariate modelling, working in a PHCT did not significantly affect job satisfaction or job stress.

Second, PCPs may feel inferior compared with their specialist colleagues, with 40.3% of PCPs responding that their role within the Italian NHS was under-

estimated. Similar findings have been reported from Australia and the UK, where 36% and 38%, respectively, perceived general practice as a second-rate area of medicine.[21,22] Also, only 48.2% of US PCPs strongly agreed that it was possible to provide high levels of care to all their patients.[23]

Third, fewer explanatory variables were significantly associated with job stress compared to those associated with job satisfaction. Predictors were more likely to characterise PCPs working in PHCTs rather than solo practitioners, including higher income, presence of ambulatory care nurses, and use of information technology within their practices. Overall, PCPs linked to PHCTs were significantly more stressed because of high workload, a finding also reported among British PCPs.[24] Despite the potential negative consequences for workload and autonomy, job satisfaction and expectation of improved quality of care were higher among British general practitioners (GPs) as a result of the introduction of the new GMS contract in 2004. Consistently lower stress levels were also associated with higher level of satisfaction.[18,19]

Our findings seem to confirm the Cox definition of work-related stress, where the concept includes an external demand and an internal perception that the response to the demand is uncomfortable.[25]

Our data are subject to several limitations. First, multilevel modelling was not used because it was not possible to identify which PCP belonged to which PHCT. However, in Italy, links to PHCTs are made to ensure continuous access to GMS, and to provide easier access for patients to the specialist services provided by LHAs, rather than needing to share either the clinical management of the patients or the same ambulatory facilities. Therefore, the effect of clustering is unlikely to affect the overall results of the study. Secondly, the attitudes of responders may have differed from those of non-responders, thus the findings may be subject to response bias. However, the homogenous distribution of PCPs across different LHAs and urbanised areas of Tuscany suggests that if bias exists it is likely to be distributed evenly across different PCPs and demographic characteristics. Moreover, while the response rate was less than optimal (45.2%), this was in keeping with comparable physician surveys.[26–28] The sample was fairly large and unselected. Finally, although multiple comparison tests could not be performed because of the multidimensional nature of the outcome scores,[29,30] false-positive results may have occurred by chance.

In conclusion, in spite of the limitations, our findings raised concerns about the impact of physician dissatisfaction and stress on the quality of health care. Future research should explore the impact of local health policy programmes that might be pursued to maintain or improve physician satisfaction, since previous studies suggest that when physicians are more satisfied with their work, the quality of patient care benefits.[6–10]

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CONFLICTS OF INTEREST

None.

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