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Factors associated with career satisfaction among general practitioners in Canada

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Introduction: There are important differences in rural, regional and urban general practice environments. The purpose of this study was to articulate models that explain career satisfaction among general practitioners (GPs) in these practice environments.
Methods: Of 4958 eligible physicians across Canada, 2810 (56.7%) completed a 12-page survey between January and March 2004, from whom a total of 256 GPs in rural, regional and urban communities were selected. Response bias was checked and found to be negligible. We used hierarchical regression analysis to record cumulative R^2, standardized beta and significance levels as each predictor was entered. We applied weighting factors to reflect the actual physician population in Canada.
Results: The models explained 88.5% of the variance in career satisfaction for GPs in small towns, 88.9% for GPs in regional communities and 86.3% for GPs in urban cities. The explanatory variables consisted of distress and coping, role in community activities, the quality of health care services and access to them, intrinsic and extrinsic rewards, workload and organizational structure.
Conclusion: Career satisfaction for small-town doctors is associated with being able to cope with stress in handling a wide variety of clinical conditions, largely on their own, but with effective collaboration from physicians in larger centres. Rural GPs also enjoy academic responsibilities. Satisfaction for GPs in regional communities also depends on coping with stress and the ability to maintain an efficiently operating set of secondary-level health services in their community. Satisfaction for urban GPs is associated with collegiality, which dampens stress, and access to a full range of health services, including community, hospital, mental health and rehabilitation services. Career satisfaction for all GPs is associated with equity, manageable workloads and effective practice management; however, all of these professional issues contribute, in small increments, to satisfaction.

Introduction : Il y a des différences importantes dans les milieux de pratique de la médecine générale entre les milieux ruraux, régionaux et urbains. Cette étude visait à formuler des modèles pour expliquer la satisfaction professionnelle chez les omnipraticiens (OP) dans ces milieux de pratique.
Méthodes : Sur 4958 médecins admissibles au Canada, 2810 (56,7 %) ont répondu à un questionnaire de 12 pages entre janvier et mars 2004. Sur ce total, on a choisi 256 OP de communautés rurales, régionales et urbaines. On a vérifié la déviation systématique des réponses, que l'on a jugée négligeable. Nous avons utilisé une analyse de régression hiérarchique pour consigner les niveaux R^2 cumulatif, beta normalisé et de signification à mesure qu'on entrait chaque variable explicative. Nous avons appliqué des facteurs de pondération pour tenir compte de la population réelle des médecins au Canada.
Résultats : Les modèles ont expliqué 88,5 % de la variation au niveau de la satisfaction professionnelle des OP dans les petites villes, 88,9 % dans le cas des OP de communautés régionales et 86,3 % dans le cas des OP d'agglomérations urbaines. La détresse et l'adaptation, le rôle des activités communautaires, la qualité des services de santé et l'accès à ceux-ci, les récompenses intrinsèques et extrinsèques, la charge de travail et la structure organisationnelle ont constitué les variables explicatives.

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Conclusion : Chez les médecins des petites villes, la satisfaction professionnelle est associée à la capacité de faire face au stress pour traiter un vaste éventail de problèmes cliniques, en grande partie seuls, mais avec la collaboration efficace de médecins des agglomérations plus importantes. Les OP ruraux apprécient aussi les responsabilités universitaires. La satisfaction chez les OP des communautés régionales dépend aussi de la capacité à faire face au stress et à maintenir un ensemble efficient de services de santé secondaires dans leur communauté. Chez les OP des milieux urbains, la satisfaction est reliée à la collégialité, qui atténue le stress, et à l'accès à un éventail complet de services de santé, ce qui comprend des services de santé communautaires, hospitaliers, de santé mentale et de réadaptation. Chez tous les OP, on établit un lien entre la satisfaction professionnelle et l'équité, des charges de travail gérables et la gestion efficace d'une pratique, mais tous ces enjeux professionnels se cumulent pour contribuer à la satisfaction.

Introduction

Collectively, general practitioners (GPs) make up one-half of the total number of physicians in Canada. Our health care system relies on GPs to be the gatekeepers for access to medical services, both in the community and in the hospital, and to be the care providers for primary medical care needs. Given Canada's geography, there will always be a need for rural, regional and urban GPs. According to figures from Statistics Canada,[1] about 25% of Canada's population lives in rural areas, defined as communities that either do not have hospitals or have small hospitals that do not provide specialized care; another 25% of the population lives in communities that have hospitals that offer a range of secondary-level specialized care; and 50% of Canada's population lives in urban centres as defined by the presence of a medical school.[1] About two-thirds of GPs live in urban centres.[2] These practice environments differ greatly. While there have been many studies on the career satisfaction of GPs, none, as far as we know, have captured the distinctions between rural, regional and urban settings.

Distinctions between urban, regional and rural practice environments

Urban

In the urban centres, GPs conduct most of their work in group practices in community-based offices, referring patients to specialists when needed, arranging admission to hospitals when required and visiting patients in hospitals, nursing homes, rehabilitation centres and sometimes mental health facilities. General practitioners in urban centres tend to create their own niche within a complex network of services that extends from primary to tertiary care centres.[3–5]

Regional

General practitioners in regional communities provide services to varying sized catchment areas in hospitals ranging from 50 to 200 beds that provide a broad range of secondary-level treatments as defined by Tepper and colleagues.[6] However, they tend to be chronically short of certified specialists required to keep their surgical, obstetrical and psychiatric programs viable.[7] Physicians in regional centres must convince small-town doctors not to refer their patients directly to the big city by assuring them that their patients will be referred back to them for follow-up care and to tertiary centres when necessary.[8] Regional physicians need to form cooperative linkages with subspecialists in tertiary centres to pass on the rare and complex cases to subspecialists at the tertiary centres.[7] When these 2 conditions are met, viable secondary level services can develop at regional referral centres.

Rural

Small-town doctors see a great number of patients and make a wide variety of clinical decisions without immediately available consultation from colleagues.[9,10] Many rural hospitals can only offer primary care, basic hospital care and triage.[11] The successful small-town doctor must at once be "a jack of all trades"[11] and be willing to be a community leader.[12] Some people have a passion to lead this kind of life[13]; however, finding such individuals has always been challenging.[14]

Career satisfaction studies of general practitioners

Many factors contribute to physicians' career satisfaction, including workplace stress and the ability to

cope with that stress,[15–20] participation in social and leisure activities,[21–27] the fair distribution of rewards,[28–31] and workload[21,27,32] as well as organizational and managerial functions.[21,23,33] Career satisfaction is also associated with the ability to access quality services for patients.[16,17,33]

Career satisfaction has been subject to a great deal of study because of its impact on the individual[29,34] and on job performance.[35–38] According to Mawardi,[39] factors that contribute to career satisfaction for physicians include accurate diagnosis and successful treatment, service to humanity, respect and appreciation, teaching and research. Factors that contribute to dissatisfaction include time pressures, patient-related problems, paperwork and administrative work, lack of facilities and fixed payment schemes.

There have been several major studies of career satisfaction specific to GPs. The major studies have been by Cooper and colleagues[40] in the United Kingdom, who found that GPs are affected by 4 broadly distinguishable stress factors:

1. demands of the job such as visiting patients at home during inclement weather, increased demands by patients for second opinions, adverse media publicity, lack of appreciation from patients and worrying about patients' complaints;
2. interruptions to family life, emergency calls during office hours, dealing with problem patients, and calls at odd hours;
3. conflicts between work and home life; and
4. administration of the practice.

More recently, the large scale American Physician Worklife Study of primary care practice by the SGIM Career Satisfaction Study Group yielded a comprehensive model of job satisfaction for American primary care physicians that articulated the importance of long-term patient–physician relationships, control over work schedules and administrative work, clinical autonomy, an appropriate practice size, balance between work and personal life, perceived time pressure and reasonable proportions of complex cases.[41] The last 2 analyses of physician satisfaction by the Canadian Medical Association in 1998 and 2002 indicated that GPs felt overworked, with too many patients and too many separate competing demands by insurance bureaucrats, hospital administration, other agencies such as public health, and specialists seeking letters documenting reasons for referral. In addition, more intrusions are made on days off than in past years, and many physicians catch up on paperwork during their days off.[42,43]

Our Canadian study of GPs differs from previous studies in that it uses a concise yet comprehensive measure of career satisfaction that captures factors related to intrinsic interest, performance, and professional and personal issues.[34] It also recognizes the distinctive practice environments of urban, regional and rural GPs.

Methods

Study populations and data collection

A stratified random sample of 5300 physicians was drawn from a comprehensive commercial database listing all 60 859 physicians actively practising in Canada as of January 2002. Data were collected between January and April 2004 using a mail questionnaire. To check for bias between responding and non-responding physicians, all non-responding physicians were sent a 1-page survey containing key items.[44]

Definition of rural

Over the years, various commissions of inquiry[45,46] have defined rural, regional and urban community sizes according to increasing thresholds of populations and resources following the principles of medical geography.[47,48] In theory, small communities serve their local populations, regional communities provide primary and secondary level services to their local populations and receive referrals for secondary services from proximal small communities, and urban communities provide primary, secondary and tertiary level services for their populations and receive referrals for tertiary services from both regional and small communities.

In practice, the distinctions between community types are often blurred. Following the lead of previous studies of general practice,[49,50] this study used an order of magnitude approach consisting of small towns, regional communities and urban centres. We chose 3 community sizes:

- small town — 5000–9999 people (population large enough to sustain a medical practice and a small hospital that does not offer secondary specialist services);
- regional — 50 000–99 999 people (population large enough to support a secondary hospital but not large enough to support tertiary services); and
- tertiary — 500 000–999 999 people (population large enough to support tertiary hospital

services but not so large that competing multihospital networks and quaternary services are involved).

Measures

The dependent variable — career satisfaction

The comprehensive career satisfaction measure developed by Lepnurm and colleagues[34] with a Cronbach's reliability that indicates the consistency of a scale of alpha 0.92 was used as the dependent variable. Reliabilities over alpha 0.7 are considered acceptable and over 0.8 are very good. This measure consisted of 16 items, with 4 dimensions:

1. inherent satisfaction with practising medicine;
2. satisfaction with professional working conditions;
3. satisfaction with job performance; and
4. satisfaction with personal life.

Each of the dimensions was measured using 4 items scored on a 6-point scale from "strongly agree" to "strongly disagree."

The independent and control variables

We arranged explanatory variables in a sequence consisting of demographic or control factors, stress and coping, health care system quality and access, professional equity, workload and organizational characteristics (Fig. 1).[33]

Control factors

Control factors consisted of sex, family responsibility, number of years in practice and self-reported health status. The family responsibility variable was based on ranked age groupings of physicians' children, recognizing that infants and toddlers require the most parental attention, followed by preschoolers and then older children.[51]

Stress and coping

Many studies of stress intertwine perceived stress, strain and burnout, often combining elements of each under the common label of stress.[52] Our study focused on perceived stress, which was labelled "distress" to distinguish it from job strain[53,54] and burnout.[55] The distress scale had very good reliability (α 0.81) with 10 items all scored on a 7-point scale from "never" to "every day." Physicians were also asked to indicate their ability to cope with stress on a single 5-point scale.

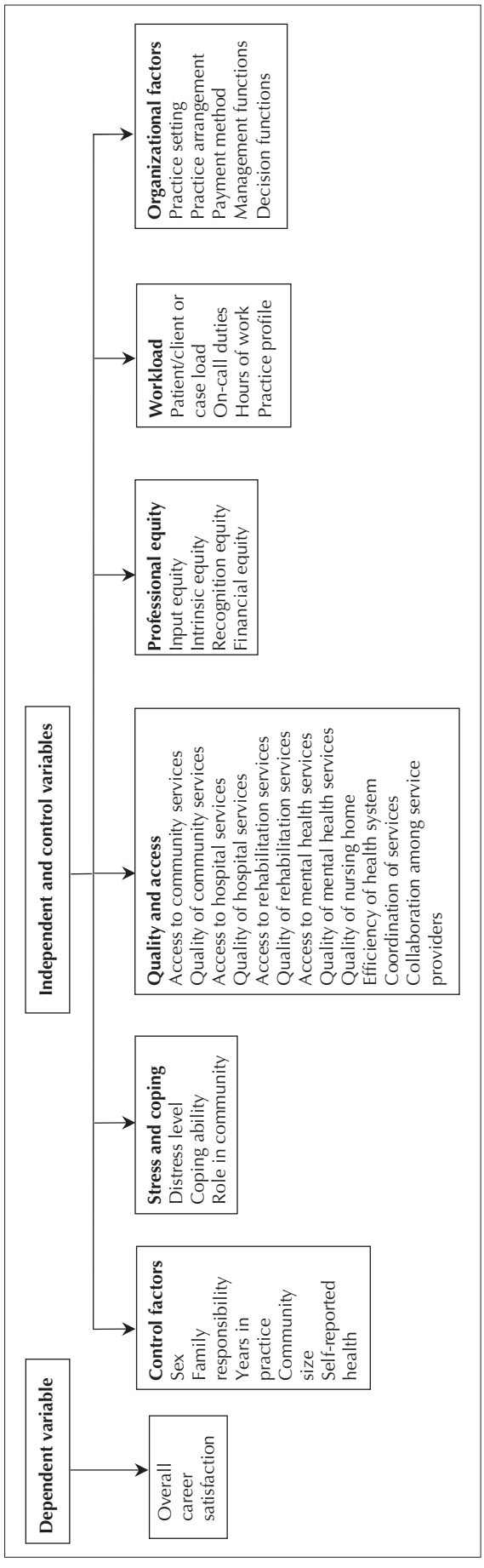


Fig. 1. Factors contributing to career satisfaction.

Community roles and activities

Community roles and activities may either contribute to or help to alleviate stress. To establish a relation between career satisfaction and roles and activities in the community, we used a matrix of activities and roles, including time spent on 6 categories of activities (sporting and recreation, cultural and arts, spiritual or religious, community and charity, health care, and other activities) and time spent on 6 types of specific roles in increasing levels of intensity (attendance and participation, volunteer, provide medical expertise, coaching or instruction, fundraising, and leadership).

Collegiality

Collegiality was measured using 3 items:

1. When you need to talk about a problem there are colleagues available who can give you sound advice?
2. A colleague is willing to take on extra work so that you can take time for special training or CME.
3. If you needed a week off to attend to urgent personal or family needs a colleague would fill in for you?

All 3 items were measured on a 6-point scale (strongly disagree to strongly agree). The collegiality scale had very good reliability (α 0.84).

Quality and access

Physicians were asked to rate their assessments of access to, and the quality of, 5 specific services (community, mental health, hospital, rehabilitation and nursing home services) using individual grading scales marked in increments of 10 from 0 to 100. Physicians were also asked to report their views on the quality of the health care system using 3 global items that rated efficiency of the system, coordination of services and collaboration among different providers in the community on 6-point scales.

Professional equity

The 4 equity measures used in this study are input, intrinsic, recognition and financial equity.[56] Input pertains to the physical, intellectual and mental effort made by physicians in providing care to patients and also includes financial investments in paying staff and maintaining facilities. Intrinsic equity refers to the inherent rewards that are derived from providing care to patients, the sense of accomplishment and fulfillment in practising medicine. Recognition pertains to externally provided rewards, such as peer recognition, gratitude expressed by patients and their families, and respect from nurses and administrators. Financial equity pertains to fairness in financial remuneration.[56] The items were all measured on 6-point scales.

Workload

We measured clinical workload by summing the number of weighted cases handled by the physician (routine cases = 1.0, complex medical cases = 1.25, cases with serious personal problems such as substance abuse and battering = 1.25 and cases characterized by both complex medical and personal problems = 1.5). A similar approach was used by Mainous and colleagues[57] in their physician work life studies. The number of hours of work, time on call and the extent of academic responsibilities were also captured.

Organizational factors

Items captured by the study included whether the physician

1. was part of an individual or group practice;
2. shared revenues and expenses, or both;
3. was on contract with a health organization; or
4. participated in alternative funding programs.

With respect to methods of payment, physicians were asked to indicate the distribution of income among fee-for-service, salary, capitation and sessional contracts.

Management variables consisted of 2 scales pertaining to level of organizational formality and managerial decision-making. The first scale was made up of 7 items related to carrying out a range of management activities, including strategic planning, setting budgets, conducting performance appraisals of staff, evaluating the efficiency of operations and the quality of services, and holding meetings to discuss administrative and clinical issues. It was found to be very reliable (α 0.89). The second scale was a managerial decision-making scale made up of 7 items related to taking on new physicians, hiring and setting pay levels of staff, purchasing supplies and medical equipment, selecting clinical services and facility financing. It was also found to be very reliable (α 0.92).

Analysis

A multiple regression model with beta values and

individual and cumulative coefficients of determination R^2 was used to verify the direction and magnitude of relations within the model.[58,59]

Results

Study subjects

Of the 5300 physicians across Canada who were sent questionnaires, 149 were deemed ineligible for a variety of reasons (retirement or reduced practice, maternity leave, return to medical school, lack of clinical care involvement, serious illness and death) and 193 had moved, leaving 4958 eligible physicians. Of these, 2810 (56.7%) returned completed questionnaires, among whom there were 1006 GPs and 112 GP-specialists (not included). We checked response bias and found that it was negligible.

A total of 256 of the responding GPs were located in the selected 3 community sizes: small town (76 GPs), regional (74 GPs) and urban (106 GPs). Responding GPs from other community sizes were not included in this study. Slightly more than one-half (53.9%) of the small-town GPs were female, compared with 41.9% in regional communities and 71.7% in the urban centres. The mean age of GPs in small towns was 46.1 years, compared with 48.3 years in regional communities and 46.8 years in urban cities (Table 1).

GPs in small towns and regional communities were more likely to have academic responsibilities and to have their offices located in a hospital than GPs located in urban areas. GPs in small towns (75%) and urban areas (80.2%) were more likely to report being part of a group practice than those working in regional communities (59.5%). GPs in small towns were less likely to rely on fee-for-service as their method of remuneration, compared with GPs in regional communities or urban areas.

Career satisfaction

We observed only slight differences in career satisfaction among GPs based on community size. GPs in small towns were slightly more satisfied with their careers (4.04 out of 6) than GPs in regional communities (3.91) or urban areas (3.93). The majority in all 3 community sizes indicated that they were satisfied or very satisfied (Table 2). Few physicians indicated that they were dissatisfied or very dissatisfied with their careers.

The coefficient of determination (R^2) was record-

Table 1. Age distribution of responding general practitioners

Community size	No. of GP respondents	Mean age, yr	Age group, yr; no. (and %)					
			25–34	35–44	45–54	55–64	65–74	75–85
Small towns (5000–9999 people)	76	46.12	5 (6.6)	31 (40.8)	26 (34.2)	12 (15.8)	2 (2.6)	0 (0.0)
Regional communities (50 000–99 999 people)	74	48.31	6 (8.1)	23 (31.1)	24 (32.4)	18 (24.3)	3 (4.1)	0 (0.0)
Urban communities (500 000–999 999 people)	106	46.82	8 (7.5)	36 (34.0)	41 (38.7)	17 (16.0)	4 (3.8)	0 (0.0)

GP = general practitioner.

Table 2. The career satisfaction levels of responding general practitioners

Community size	No. of GP respondents	Mean satisfaction rating	6-point scale rating;* no. (and %) of responses					
			Very dissatisfied	Dissatisfied	Slightly dissatisfied	Slightly satisfied	Satisfied	Very satisfied
Small towns (5000–9999 people)	76	4.04	0 (0.0)	7 (9.2)	16 (21.1)	24 (31.6)	25 (32.9)	4 (5.3)
Regional communities (50 000–99 999 people)	74	3.91	2 (2.7)	4 (5.4)	18 (24.3)	25 (33.8)	25 (33.8)	0 (0.0)
Urban communities (500 000–999 999 people)	106	3.93	1 (0.9)	5 (4.7)	25 (23.6)	45 (42.5)	29 (27.4)	1 (0.9)

GP = general practitioner.
*The use of 2 choices around the midpoint (slightly dissatisfied and slightly satisfied) rather than a single choice (neither dissatisfied nor satisfied), is used to avoid the contaminating effect of mixing respondents who really were undecided with those who actually tended toward a middle position. Furthermore, splitting the midpoint prompts the respondent not to select the midpoint as a default choice.[83–85]

ed cumulatively and separately for the 3 different groups (small town = 76, regional = 74 and urban = 106) and expressed in the columns (5000–9999, 50 000–99 999 and 500 000–999 999). By convention, control factors (sex, family responsibility, number of years in practice and self-reported health status) are entered first to control for their effect on the total explained variance. In this study, they are important, explaining 33.4% of the variance in career satisfaction for small-town physicians but only 4.9% of the variance for regional physicians and 7.1% of the variance in career satisfaction for the urban physicians (Table 3). The factors and variables were entered in sequence according to the model (Fig. 1) and the cumulative variance in career satisfaction increased cumulatively until the last factor of payment method was entered. The incremental contribution of any one factor or variable can be determined by subtraction from the previous cumulative variance. For example, financial equity makes an incremental contribution of 5.6% (76.3%–81.9%) to the variance in career satisfaction for small-town doctors and only 0.1% (75.5%–75.6%) and 1.8% (78.1%–79.9%) for regional and urban physicians.

The multivariate models explained a high percentage of variance in career satisfaction: 88.5% in small towns, 88.9% in regional communities and 86.3% in urban areas. As expected, the contribution of individual explanatory variables differed between the 3 community sizes (Table 4 and Table 5).

Control factors

The control factors of sex (Table 4), degree of family responsibility, number of years in practice and self-reported health (Table 5) contributed to the career satisfaction model (Table 3) in all 3 community sizes. In general, greater career satisfaction was associated with being male, with more years of practice, with less family responsibility and with greater self-reported health on a 5-point scale from very poor to excellent.

Table 3. Factors explaining the career satisfaction of general practitioners across 3 community sizes*

	Community size								
	Small towns (5000–9999 people)			Regional communities (50 000–99 999 people)			Urban communities (500 000–999 999 people)		
Independent and control variables	R^2	β	*p* value	R^2	β	*p* value	R^2	β	*p* value
Control factors									
Sex	7.0	+0.010	0.346	0.0	+0.045	0.001	0.0	–0.059	0.000
Degree of family responsibility	7.0	–0.140	0.000	1.0	–0.015	0.302	1.0	–0.037	0.003
Years in practice	19.5	+0.147	0.000	1.6	+0.045	0.018	1.4	+0.126	0.000
Self-reported health	33.4	+0.138	0.000	4.9	+0.053	0.000	7.1	+0.052	0.000
Stress and coping, and role in community									
Distress level	58.9	–0.572	0.000	36.0	–0.332	0.000	55.5	–0.353	0.000
Ability to cope with stress	61.7	+0.298	0.000	40.1	+0.285	0.000	NA	NA	NS
Time spent on activities of interest in community	NA	NA	NS	41.2	–0.120	0.000	56.3	–0.042	0.001
Community activities relieve stress	NA	NA	NS	41.7	–0.190	0.000	NA	NA	NS
Change in community leadership commitment	NA	NA	NS	NA	NA	NS	56.4	+0.080	0.000
Quality and access									
Access to community services	NA	NA	NS	42.2	+0.188	0.000	NA	NA	NS
Quality of community services	NA	NA	NS	NA	NA	NS	56.7	+0.210	0.000
Access to hospital	NA	NA	NS	NA	NA	NS	57.0	+0.269	0.000
Quality of hospital	64.9	+0.158	0.000	42.2	+0.051	0.006	58.2	+0.086	0.000
Access to rehabilitation services	NA	NA	NS	51.0	+0.139	0.000	60.3	+0.095	0.000
Quality of rehabilitation services	NA	NA	NS	52.9	+0.043	0.015	60.3	+0.113	0.000
Access to mental health services	NA	NA	NS	58.8	+0.270	0.000	61.8	+0.106	0.000
Quality of mental health services	NA	NA	NS	NA	NA	NS	63.6	+0.168	0.000
Access to nursing home	NA	NA	NS	59.0	+0.204	0.000	NA	NA	NS
Quality of nursing home	NA	NA	NS	60.3	+0.129	0.000	64.0	+0.061	0.000
Efficiency of health system	66.7	+0.045	0.000	60.3	+0.342	0.000	66.0	+0.134	0.000
Coordination of services	66.7	+0.177	0.000	NA	NA	NS	NA	NA	NS
Collaboration between providers	70.6	+0.206	0.000	60.7	+0.130	0.000	67.0	+0.096	0.000

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Distress

Distress was a very important contributor to career satisfaction, with cumulative variance rising to 58.9% (an incremental rise of 25.5%) for small-town physicians, 36.0% (an incremental rise of 31.1%) for regional physicians and 55.5% (an incremental rise of 48.4%) for urban physicians. Levels of distress were negatively associated with career satisfaction, with small-town physicians reporting somewhat higher levels of distress than the other 2 groups (Table 3). The ability to cope with stress contributed to career satisfaction for both small-town and regional physicians. Time spent on community activities were minor and somewhat negative factors for regional and urban physicians.

Access to community services

Assessments of access to and the quality of a variety of services within their local health care system were important contributors to career satisfaction for both regional and urban physicians. Among small-town physicians, only quality of hospital services was a contributor; however, efficiency and collaboration between providers from larger communities were also important contributors. The variance in career satisfaction explained by this group of variables ranged from 19.0% for regional physicians to 8.9% for small town and 10.6% for urban physicians (Table 3).

Equity

The 4 equity scales explained from 11% to 15% of variance for the 3 groups. Each group reported similar levels of input, intrinsic and recognition equity, with small-town physicians reporting somewhat higher levels of financial equity than their urban counterparts. All were positively associated with career satisfaction, with the exception of a minor negative association with input equity among urban physicians (Table 3).

Table 3. Continued

	Community size								
	Small towns (5000–9999 people)			Regional communities (50 000–99 999 people)			Urban communities (500 000–999 999 people)		
Independent and control variables	R^2	β	*p* value	R^2	β	*p* value	R^2	β	*p* value
Professional equality									
Input equity	72.1	+0.154	0.000	68.8	+0.193	0.000	67.3	–0.030	0.037
Intrinsic equity	72.6	+0.052	0.000	70.3	+0.211	0.000	77.2	+0.370	0.000
Recognition equity	76.3	+0.162	0.000	75.5	+0.116	0.000	78.1	+0.124	0.000
Financial equity	81.9	+0.241	0.000	75.6	+0.216	0.000	79.9	+0.221	0.000
Workload									
Weekly hours	NA	NA	NS	76.3	+0.093	0.000	81.3	–0.028	0.043
Weekday evenings on call	82.5	–0.045	0.000	NA	NA	NS	81.8	–0.117	0.000
Saturdays or Sundays on call	NA	NA	NS	79.7	–0.091	0.000	81.8	–0.083	0.000
Clinical workload	84.4	–0.115	0.000	80.1	+0.258	0.000	NA	NA	NS
Academic responsibilities	84.6	+0.091	0.000	NA	NA	NS	82.1	–0.077	0.000
Organizational factors									
Individual or group setting	85.5	+0.092	0.000	80.5	+0.071	0.000	83.0	+0.090	0.000
Community or hospital setting	85.7	–0.076	0.000	80.8	+0.084	0.000	83.0	–0.045	0.001
Individual or shared revenue or expenses	86.0	+0.040	0.001	85.1	–0.422	0.000	NA	NA	NS
Collegiality	NA	NA	NS	NA	NA	NS	84.3	+0.188	0.000
No. of physicians	NA	NA	NS	86.2	–0.188	0.000	84.3	–0.088	0.000
Become less formal or more formal	86.1	+0.038	0.001	87.1	–0.079	0.000	84.4	–0.055	0.000
Do you have sufficient decision influence?	NA	NA	NS	87.2	–0.045	0.000	84.5	+0.139	0.000
Management functions	87.6	+0.158	0.000	87.7	+0.089	0.000	84.5	+0.177	0.000
Delegation of decisions	87.6	–0.040	0.000	88.0	+0.042	0.010	86.1	–0.257	0.000
Payment method	88.5	–0.123	0.000	88.9	+0.173	0.000	86.3	+0.087	0.000

NA = not applicable; NS = not statistically significant.

*β values and levels of significance indicate the magnitude and strength of the association between career satisfaction and individual ranked factors and continuous variables. β values with positive signs indicate a direct relationship. For example, career satisfaction is positively related with years in practice and self-reported health. β values with negative values indicate an inverse relationship. The best example is that career satisfaction declines as level of distress rises. Note, many of the incremental contributions tend to be small but significant. Insignificant factors were removed from the model; they are recorded as NS.

Workload factors

Workload factors made small but significant contributions to explain variance in career satisfaction, with an incremental increase of 4.9% for regional, 2.5% for small town and 2.3% for urban physicians. Workload factors were negatively correlated with career satisfaction, with the exception of academic responsibilities, which was a positive association for small-town physicians. Hours of work and clinical workload were positively associated with career satisfaction for regional physicians (Table 3).

Practice structure

Practice structure and the manner in which work is organized were also found to contribute to career satisfaction. For regional physicians, this explained 8.8% of variance in career satisfaction; it explained 3.9% for small-town physicians and 4.2% for urban physicians. The most striking organizational variable was the handling of revenues and expenses. In regional communities, GPs preferred to handle both revenues and expenses as individuals, even though they often practised in groups (Table 3).

Table 4. Coding for ranked categorical factors for general practitioners*

Independent factors	Code	No. (and %) of GP respondents: Small towns (5000–9999 people), *n* = 76†	Regional communities (50 000–99 999 people), *n* = 74†	Urban communities (500 000–999 999 people), *n* = 106†
Sex				
Female	1	41 (53.9)	31 (41.9)	76 (71.7)
Male	2	35 (46.1)	43 (58.1)	30 (28.3)
Degree of family responsibility‡				
No children	0	20 (26.3)	28 (37.8)	32 (30.2)
Older children	1	12 (15.8)	8 (10.8)	20 (18.9)
Young children	2	20 (26.3)	17 (23.0)	40 (37.7)
Infants and toddlers	3	24 (31.6)	21 (28.4)	14 (13.2)
Academic responsibilities§				
None	0	33 (43.4)	31 (41.9)	53 (50.0)
Some (1%–15% of time)	1	43 (56.6)	43 (58.1)	50 (47.2)
Considerable (≥ 15% of time)	2	0 (0.0)	0 (0.0)	3 (2.8)
Individual or group setting				
Individual	1	19 (25.0)	30 (40.5)	21 (19.8)
Group	2	57 (75.0)	44 (59.5)	85 (80.2)
Community or hospital setting				
Community	1	69 (90.8)	69 (93.2)	102 (96.2)
Hospital	2	7 (9.2)	5 (6.8)	4 (3.8)
Individual or shared revenue and expenses				
Individual revenue and individual expenses	1	26 (34.2)	29 (39.2)	28 (26.4)
Individual revenue and shared expenses	2	31 (40.8)	32 (43.2)	46 (43.4)
Shared revenue and shared expenses	3	7 (9.2)	7 (9.5)	15 (14.2)
Salary or contract	4	12 (15.8)	6 (8.1)	17 (16.0)
Payment method				
More than 95% FFS	7	33 (43.4)	52 (70.3)	76 (71.7)
75%–94% FFS	6	24 (31.6)	17 (23.0)	15 (14.2)
51%–74% FFS	5	11 (14.5)	1 (1.4)	5 (4.7)
Other types	4	4 (5.3)	1 (1.4)	1 (0.9)
51%–74% fixed¶	3	1 (1.3)	1 (1.4)	3 (2.7)
75%–94% fixed	2	1 (1.3)	2 (2.8)	1 (0.9)
More than 95% fixed	1	2 (2.6)	0 (0.0)	5 (4.7)

GP = general practitioner; FFS = fee-for-service.
*Ranked factors are non-parametric in that they are expressed in frequency distributions with categories arranged from lowest to highest.
†Of total respondents, 76 (30%) were from small town communities, 74 (29%) were from regional communities and 106 (41%) were from urban communities.
‡Older children included those in high school and older children living at home; young children included those in preschool and elementary.
§Included teaching and research.
¶ Salaried or fixed contract.

Payment methods

Although payment methods were found to be significant factors contributing to career satisfaction, their influence was not great (Table 3). The most important finding is that the perspectives of rural practitioners differed from their urban colleagues. Rural physicians preferred the fee-for-service method, while both regional and urban physicians supported blended or fixed payment schemes (Table 3 and Table 4).

Table 5. Ranges, means and standard deviations for continuous variables for general practitioners*

	Community size					
	Small towns (5000–9999 people)		Regional communities (50 000–99 999 people)		Urban communities (500 000–999 999 people)	
Variables	Mean (and SD)	Range	Mean (and SD)	Range	Mean (and SD)	Range
Dependent variable						
Career satisfaction	4.04 (1.06)	1–6	3.91 (1.02)	1–6	3.93 (0.91)	1–6
Independent and control variables						
Control factors						
Degree of family responsibility	2.99 (2.53)	0–10	2.45 (2.36)	0–10	2.25 (2.00)	0–10
Years in practice	18.5 (10.2)	1–55	20.8 (9.18)	1–55	18.3 (9.6)	1–55
Self-reported health	3.86 (0.81)	1–5	3.96 (0.82)	1–5	3.88 (0.83)	1–5
Stress and coping, and role in community						
Distress level	40.1 (10.3)	7–70	44.2 (8.7)	7–70	41.4 (9.8)	7–70
Ability to cope with stress	3.97 (0.78)	1–5	3.82 (0.78)	1–5	3.83 (0.75)	1–5
Time spent on activities of interest in community	2.70 (1.01)	1–20+	2.69 (0.94)	1–20+	2.66 (0.95)	1–20+
Community activities relieve stress	4.25 (0.91)	1–6	4.28 (0.94)	1–6	4.16 (0.84)	1–6
Change in community leadership commitment	3.20 (0.54)	1–5	3.07 (0.60)	1–5	3.14 (0.49)	1–5
Quality and access						
Access to community services	57.4 (21.1)	0–100	50.3 (20.9)	0–100	58.0 (19.0)	0–100
Quality of community services	62.4 (22.2)	0–100	61.0 (19.3)	0–100	68.5 (14.6)	0–100
Access to hospital	69.5 (20.9)	0–100	57.8 (20.8)	0–100	52.0 (21.6)	0–100
Quality of hospital	75.0 (15.8)	0–100	73.1 (14.9)	0–100	72.4 (15.5)	0–100
Access to rehabilitation services	41.9 (22.9)	0–100	44.2 (21.9)	0–100	46.0 (19.3)	0–100
Quality of rehabilitation services	59.5 (25.6)	0–100	66.4 (18.3)	0–100	67.7 (13.9)	0–100
Access to mental health services	48.0 (24.5)	0–100	32.3 (17.9)	0–100	36.5 (21.2)	0–100
Quality of mental health services	60.7 (24.0)	0–100	53.0 (22.0)	0–100	63.4 (17.9)	0–100
Access to nursing home	43.7 (25.4)	0–100	45.0 (23.5)	0–100	45.3 (19.3)	0–100
Quality of nursing home	67.8 (19.7)	0–100	65.5 (17.8)	0–100	63.9 (15.7)	0–100
Efficiency of health system	3.58 (1.0)	1–6	2.99 (0.91)	1–6	3.05 (0.96)	1–6
Coordination of services	3.39 (0.91)	1–6	3.16 (0.84)	1–6	3.16 (0.87)	1–6
Collaboration among service providers	3.75 (0.94)	1–6	3.84 (0.96)	1–6	3.43 (0.97)	1–6
Professional equality						
Input equity	31.6 (4.2)	6–42	32.4 (5.0)	6–42	31.3 (4.8)	6–42
Intrinsic equity	27.8 (4.8)	6–36	27.6 (4.5)	6–36	27.1 (5.0)	6–36
Recognition equity	20.2 (4.2)	5–30	19.3 (4.0)	5–30	19.5 (4.2)	5–30
Financial equity	20.8 (6.0)	5–30	18.0 (6.7)	5–30	17.9 (7.0)	5–30
Workload and organizational factors						
Weekly hours	47.0 (13.4)	8–90	48.7 (11.0)	8–90	43.2 (14.1)	8–90
Weekday evenings on call	3.87 (2.29)	0–18+	4.04 (2.38)	0–18+	3.92 (2.64)	0–18+
Saturdays or Sundays on call	2.88 (1.29)	0–8	2.66 (1.25)	0–8	2.65 (1.47)	0–8
Clinical workload	163.8 (72.7)	10–300	180.1 (75.3)	10–300	135.1 (74.8)	10–300
Collegiality	13.8 (2.8)	3–18	13.6 (3.2)	3–18	12.2 (3.7)	3–18
No. of physicians†	5.9 (5.8)	1–20+	6.6 (7.6)	1–20+	6.4 (9.2)	1–20+
Become less formal or more formal	2.71 (0.61)	1–5	2.80 (0.44)	1–5	2.85 (0.47)	1–5
Do you have sufficient decision influence?	3.82 (0.48)	1–5	3.96 (0.45)	1–5	3.76 (0.64)	1–5
Management functions	12.9 (4.2)	7–21	12.4 (4.0)	7–21	13.2 (4.2)	7–21
Delegation of decisions	12.1 (2.0)	7–14	12.4 (1.6)	7–14	11.4 (2.2)	7–14

SD = standard deviation.
*Continuous variables are parametric in that they have means and standard deviations.
†Included doctors in offices and hospitals.

Discussion

Most GPs were satisfied with their career, with small-town doctors being slightly more satisfied. They also perceived slightly greater recognition and financial equity than their colleagues in larger cities. Small-town doctors also work longer hours and it is not surprising that they would find distress to be very important in career satisfaction. These findings are similar to US studies of primary practice.[20,60,61] Although GPs in Canada are concerned with financial equity, they appear to place less importance on financial rewards than their colleagues in the United States.[20,60,61] These findings agree with our companion study of psychiatrists and surgeons.[33]

Community activities are important[62] but are not viewed in the same way by GPs in different sized communities. Community activities were not found to be significant for physicians in small communities. Perhaps this is because all small-town GPs have an important leadership role in the community.[12] Physicians in regional communities find that leadership roles relieve distress, and physicians in urban communities find leadership roles satisfying. Perhaps group practice arrangements in urban settings are not as stress producing as the smaller groups in regional communities. Further, community activities may afford GPs leadership opportunities that are not available to them in hospitals.

This study has illustrated some differences in the way GPs from very different community sizes consider access and quality issues. GPs in small towns only considered the quality of hospital services to be important because specialized facilities are not located in their communities, whereas physicians in regional referral centres considered access and quality of hospital and specialized institutional services to be especially important because to be successful referral centres they must be capable of providing a range of services or patients will bypass them and go to urban centres.[8,63] General practitioners in urban centres consider access and quality of the full continuum of services from community to nursing homes to be important because admission to facilities is more regulated in urban centres.[60,61,63,64] Urban physicians in this study reported lower ratings of access to all services.

Our findings that GPs in small towns are particularly concerned about efficiency and collaboration among health care providers of specialized services is in agreement with the study of obstetrics in a small hospital in British Columbia[65] and of cholecystectomies in Labrador.[66]

Having considered quality issues, this study also demonstrated the importance of professional equity, which is a broader concept than fairness, in explaining the career satisfaction of GPs.[56] GPs in small towns and especially in regional centres work longer hours than GPs in urban centres and this is captured by our measure of input equity. It takes physical stamina and the ability to cope with stress to be a country doctor; this is borne out in 2 large-scale surveys by the Canadian Medical Association in 1998[42] and in 2002[43] and anecdotally by Renouf's lament of a country doctor.[10] Further, Wetmore and Stewart[67] suggest that it takes confidence to carry out procedural skills. In terms of input equity, GPs in urban centres felt they had contributed more than they had received in return. In absolute terms, GPs in small towns reported input equities of 31.6 points on an equity scale of 42, 32.4 points in regional communities and 31.3 points in urban cities.

Unlike their urban colleagues, GPs in small towns and regional communities reported positive correlations between input equity and career satisfaction. This reinforces the findings of previous Canadian studies of rural practice.[67–69] Physicians with a societal orientation[12] and the desire for a varied practice[68] were more likely to prefer rural practice, and those who had more confidence in procedural skills were more likely to develop satisfying rural practices.[67]

GPs in small-town and regional practices consider recognition more important, compared with their urban colleagues who are often overshadowed by specialists. Urban GPs consider intrinsic equity more important. This study found that financial equity is important to small-town doctors. This finding is corroborated by many US studies and is not surprising in light of the hours worked by small-town doctors, the amount of on-call work that they do and the scarcity of collegial support.[16,69]

Career satisfaction is also affected by the organization of the work. GPs in regional centres reported the highest workloads, followed by rural GPs and then urban GPs. GPs in small towns are often overworked, and excessive clinical workloads are associated with dissatisfaction. Conversely, GPs in the regional areas appear to thrive on high clinical workloads; this is crucial to maintain the viability of their hospitals as referral centres.[7] Studies focusing on the circumstances of regional general practice are rare. Hay's[7] work in Australia is one of the very few studies detailing the factors that contribute to viable regional medical practices. Anecdotal evidence gathered by the Saskatchewan Commissions

on Directions in 1990[70] for Saskatchewan, which has always had difficulties in recruiting and retaining physicians outside the major cities, supports Hay's findings in that collaboration between GPs, GP specialists and certified specialists from larger centres is essential to maintaining viable referral hospitals in Moose Jaw and Prince Albert. Having viable referral centres in regional communities also reduces pressures on urban centres. More research in this area should be conducted.

GPs in some urban centres compete for patients as there is an abundance of GPs in many of the major cities. Of the 76 GPs in small towns, 43 reported having academic responsibilities and found this to be positively associated with career satisfaction. Conversely, GPs in urban centres reported a negative association between career satisfaction and academic duties. Perhaps academic duties are not rewarded well enough or perhaps they detract from clinical work. Some studies suggest that physicians selecting general practice tend to be clinically and not academically oriented.[72]

The development of group practice and the phasing out of solo practice has been driven by the need for collegial support in the diagnosis and treatment of patients and by physicians' desire to resolve conflicts between their personal and working lives. This appears to be true for GPs, even in small towns. With the exception of GPs in regional communities, most GPs do not want to set up their practices in hospitals. In the urban centres, GPs do not have much decision-making authority in hospitals. However, they do have more influence in regional centres.

Collegiality was important to urban GPs but not to GPs in regional or small communities. GPs in urban areas report the lowest ratings of collegial support, yet they value it most highly. It seems that urban GPs view each other as competitors for patients. These findings make sense when organizational issues are considered. GPs in small towns appear to be ready for more formal management of their practices, which is understandable; they are stretched between doing paperwork and travelling to see some of their patients in their local hospital, and they only have a few colleagues in very small group practices. Small-town doctors often have difficulties scheduling holidays because of the lack of available locums.[9] Although GPs in regional and urban centres also prefer group practice and the sharing of expenses, they do not appear to want formal management practices. Studies of managed care in the United States are cold comfort for Canadian GPs who hear tales of preadmission authorizations, mandatory second opinions and other intrusive bureaucratic procedures before diagnostic tests or treatment procedures can be conducted.[60,61] Nevertheless, when basic management functions, such as conducting meetings to discuss administrative or clinical issues, establishing budgets, evaluating efficiency of operations or quality of services, and conducting staff performance appraisals, are carried out in a formal way, the GPs reported that career satisfaction was positively correlated with the presence of formal management for such functions. However, small-town GPs preferred to make managerial decisions themselves, while GPs in regional and urban centres let go of these decisions.

Finally, it was not surprising that GPs in small towns still prefer fee-for-service remuneration and GPs in regional and urban centres are more willing to experiment with blended and alternative remuneration systems.

Limitations

The response rate of 56.7% in this study was higher than most comparable studies. Proper stratification, including statistical power calculations, and non response bias checks followed by adjustments to the raw results with weighting factors constitutes the soundest approach to securing a sufficient number of respondents who accurately represent the study population.[72–74] A final limitation of the study is the cross-sectional design, which prevents the ascribing of causality. Therefore, the emphasis in this has been on the development of valid measures.

Conclusion

This study has demonstrated that GPs' career satisfaction can be explained; however, there appear to be distinctive practice environments in rural areas, regional communities and in urban cities. Financial incentives and familiarity with small-town practice may entice a young medical school graduate to spend a few years in a small town[75,76]; however, retention will likely depend on making this lifestyle attractive to small-town practitioners and their families.[67,76] The opportunity to play a senior role in a regional referral hospital may entice some GPs to set up practice in a regional community, but retention will depend on opportunities to practice a broad range of clinical skills,[7,57] the capacity to receive continuing medical education to maintain advanced skills, and the availability of relief or collegial support.[69,71,75–77] Career satisfaction for urban

GPs rests on finding and maintaining a respected niche in the existing large health care network.[78–80] Urban GPs require steady access to quality services across the full continuum of services since they see the broadest range of general medical cases. Controlling working hours, maintaining the practice infrastructure and securing supportive collegial relationships is more complex in expensive and more competitive urban environments.

Perhaps smaller countries can rely exclusively on urban GPs, but Canada will always require a steady supply of rural and regional GPs. Regardless of their environment, GPs have to maintain a vibrant role in academia, in refining their societal roles as the first point of contact for primary care and in continually refining their scope of practice in a proactive manner.[71,81,82]

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