

Evaluating practice patterns for managing moderate to severe plaque psoriasis

Role of the family physician

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Abstract

Objective To describe practice patterns for care of Canadian patients with moderate to severe plaque psoriasis.

Design Online survey of a consumer panel.

Setting Participants were drawn from a population-wide Canadian consumer database.

Participants To be eligible to participate, respondents had to have been diagnosed with plaque psoriasis within the past 5 years, and to have had body surface area involvement of 3% or greater in the past 5 years, or to have psoriasis on a sensitive area of the body (hands, feet, scalp, face, or genitals), or to be currently receiving treatment with systemic agents or phototherapy for psoriasis.

Main outcome measures Proportion of respondents with psoriasis managed by FPs and other specialists, psoriasis therapies, comorbidities, and patient satisfaction.

Results Invitations were sent to 3845 panelists with self-reported psoriasis, of which 514 qualified to complete the survey. Family physicians were reported to be the primary providers for diagnosis and ongoing care of psoriasis in all provinces except Quebec. Overall physician care was reported to be satisfactory by 62% of respondents. Most respondents receiving over-the-counter therapies (55%) or prescribed topical therapies (61%) reported that their psoriasis was managed by FPs. Respondents receiving prescription oral or injectable medications or phototherapy were mainly managed by dermatologists (42%, 74%, and 71% of respondents, respectively). Ongoing management of respondents with body surface area involvement of 10% or greater was mainly split between dermatologists (47%) and FPs (45%), compared with rheumatologists (4%) or other health care professionals (4%). Of those respondents receiving medications for concomitant health conditions, treatment for high blood pressure was most common (92%), followed by treatment for heart disease (75%) and elevated cholesterol and lipid levels (68%).

Conclusion Patient-reported practice patterns for the diagnosis and management of moderate to severe psoriasis vary among provinces and in primary and secondary care settings.

EDITOR'S KEY POINTS

- The proportion of patients who were satisfied with their current care ranged from 55% to 70% (mean 62%) across Canada.
- Family physicians were reported to be the primary providers for diagnosis and ongoing care of individuals with psoriasis in all provinces except Quebec, where this was done predominantly by dermatologists. Ongoing care of individuals reporting body surface area involvement of 10% or greater was mainly split between dermatologists (47%) and FPs (45%), compared with rheumatologists (4%) or other health care professionals (4%), which has implications for Canadian referral patterns and patient management.
- Current psoriasis guidelines recommend prescription oral or injectable medications or phototherapy as primary treatment for moderate to severe psoriasis or extensive lesions; topical agents generally serve an adjunctive role. Most of the survey respondents reported current treatment with topical agents, consistent with previous findings that the use of such therapies might be disproportionately and inappropriately high for the optimal treatment of moderate to severe psoriasis.

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Évaluation des façons de traiter le psoriasis en plaques modéré à sévère

Rôle du médecin de famille

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Résumé

Objectif Décrire les modes de traitement des patients canadiens souffrant de psoriasis en plaques modéré à sévère.

Type d'étude Enquête via le Web auprès d'un groupe de consommateurs.

Contexte Les participants provenaient d'une base de données sur l'ensemble des consommateurs canadiens.

Participants Pour être aptes à participer, les répondants devaient avoir eu un diagnostic de psoriasis en plaques depuis moins de 5 ans et avoir eu une atteinte couvrant au moins 3% de la surface corporelle au cours des 5 dernières années, avoir du psoriasis dans une région sensible du corps (mains, pieds, cuir chevelu, face ou organes génitaux) ou être actuellement traités avec des agents systémiques ou par photothérapie pour le psoriasis.

Principaux paramètres à l'étude Proportion des répondants traités pour leur psoriasis par des MF et par d'autres spécialistes, traitements du psoriasis, comorbidités et satisfaction des patients.

Résultats Des invitations ont été envoyées à 3845 personnes se disant atteintes de psoriasis, et 514 d'entre elles se sont qualifiées pour l'enquête. Selon les répondants, ce sont des médecins de famille qui étaient surtout responsables du diagnostic et du traitement du psoriasis dans toutes les provinces, sauf au Québec. Dans l'ensemble, les soins des médecins étaient jugés satisfaisants par 62% des répondants. La plupart de ceux recevant des médicaments en vente libre (55%) ou des thérapies topiques prescrites (61%) déclaraient que leur psoriasis était traité par des MF. Les répondants auxquels on prescrivait des médicaments oraux ou injectables ou de la photothérapie étaient principalement traités par des dermatologues (42%, 71% et 74% des répondants, respectivement). Le suivi des répondants qui avaient une atteinte touchant au moins 10% de la surface corporelle était partagé entre les dermatologues (47%) et les MF (45%), contre 4% pour les rhumatologues et 4% pour les autres professionnels de la santé. Parmi les répondants qui prenaient des médicaments pour des problèmes de santé concomitants, la majorité étaient traités pour de l'hypertension artérielle (92%), pour des maladies cardiaques (75%) et pour des niveaux élevés de cholestérol et de lipides (68%).

Conclusion Selon les patients, les façons de diagnostiquer et de traiter le psoriasis modéré à sévère varient selon les provinces et selon les milieux de soins primaires ou secondaires.

POINTS DE REPÈRE DU RÉDACTEUR

- La proportion des patients qui étaient satisfaits de leur traitement actuel variait entre 55% et 70% (moyenne: 62%) pour l'ensemble du Canada.
- Les répondants rapportaient que les médecins de famille étaient les principaux responsables du diagnostic et du suivi du psoriasis dans toutes les provinces, sauf au Québec, où les dermatologues étaient plus nombreux à s'en occuper. Le suivi des personnes qui disaient avoir une atteinte d'au moins 10% de la surface corporelle était partagé entre les dermatologues (47%) et les MF (45%), par rapport à 4% pour les rhumatologues et 4% pour les autres professionnels de la santé, ce qui a des répercussions sur les façons de traiter les patients et de les diriger en spécialité au Canada.
- Les directives actuelles sur le psoriasis recommandent l'utilisation de médicaments oraux ou injectables ou de photothérapie pour le traitement primaire du psoriasis modéré à sévère ou en cas de lésions étendues; les agents topiques ont généralement un rôle accessoire. La plupart des répondants à l'enquête disaient être actuellement traités avec des agents topiques, confirmant ainsi les observations antérieures voulant que la trop forte utilisation de ce type de traitement pourrait être disproportionnée et inappropriée par rapport à un traitement optimal du psoriasis modéré à sévère.

Cet article a fait l'objet d'une révision par des pairs.
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Psoriasis affects approximately 1% to 3% of the Canadian population.¹⁻³ It is associated with impaired physical and psychosocial functioning.⁴ In Canada, management of psoriasis is generally initiated through contact with patients' FPs—the "gatekeepers" of the health care system⁵—with subsequent referral to other specialists.⁵⁻⁸ An integrated service model of care requires efficient and appropriate referral to provide continuity and optimize disease management.^{9,10} Canadian guidelines recommend that FPs consider referral to other specialists when plaque psoriasis is generalized, complex, distressing to the individual, or unresponsive to current therapy (Box 1).¹¹ The guidelines also recommend involving other specialists when confirming the diagnosis, assessing therapeutic options, managing comorbidities, or providing in-depth counseling or patient education.¹¹ Recent reports suggest psoriasis is associated with a number of serious comorbidities, some of which might share common immune-inflammatory mechanisms.¹² Associated conditions include psoriatic arthritis,¹³⁻¹⁵ cardiovascular disease,^{16,17} diabetes,¹⁷ gastrointestinal diseases,¹¹ being overweight or obese,^{18,19} metabolic dysfunction,^{13,17,18,20} and mental health disorders.¹³ An increased risk of mortality in individuals with psoriasis might be attributable at least in part to associated comorbidities.^{16,21}

Recently published Canadian guidelines highlighted the need for assessing patterns of care in the management of plaque psoriasis and evaluating patient satisfaction.¹¹ This study investigated the practice patterns for diagnosis and treatment by surveying a sample of Canadians with moderate to severe plaque psoriasis.

Box 1. Criteria for referrals to specialists according to Canadian guidelines for the management of plaque psoriasis

Referrals to a specialist should be considered

- when disease is extensive, distressing, or unresponsive, or when the patient requires in-depth counseling or education outside the scope of primary care practice;
- to confirm a diagnosis, to assess or help establish an appropriate therapeutic regimen, or to help manage more complex cases;
- in patients who become unresponsive to previously successful treatments or who experience other adverse reactions to topical medications; and
- in response to a patient's request for a referral to a dermatologist.

Data from Canadian Psoriasis Guidelines Committee.¹¹

METHODS

Design and measures

A population-wide, cross-sectional sample representative of the adult Canadian population and balanced by region and sex was identified using proprietary consumer databases.²² These databases consisted of information on members of the general public who had consented to be contacted to complete surveys voluntarily. E-mail invitations were sent to a national sample of 3845 Canadian adults (≥ 18 years) with self-reported psoriasis (Figure 1).

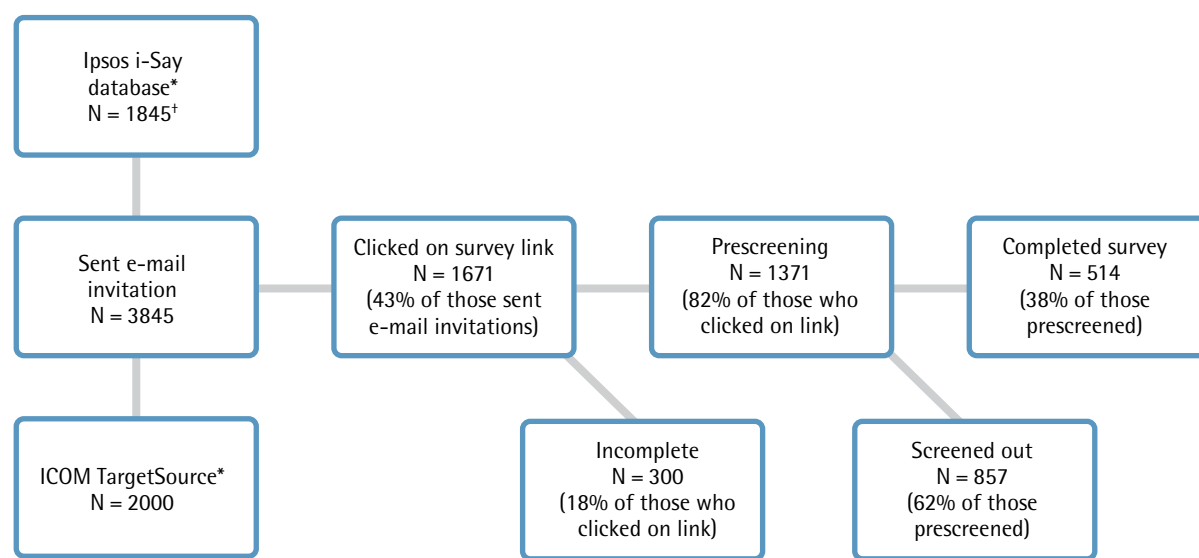
Responses to a prescreening questionnaire determined eligibility. Respondents were included in the study if they reported being diagnosed by a physician with psoriasis of at least moderate severity (currently or at some time in the past 5 years) and having plaque-type psoriasis (through recognition of visual images and description). In addition, eligible subjects met at least 1 of the following criteria: a self-estimated body surface area (BSA) involvement of at least 3% at some time in the past 5 years using the palm method (ie, palm of the hand is approximately 1% of the BSA)²³; psoriasis on a sensitive area of the body (hands, feet, scalp, face, or genitals); or current treatment with prescription systemic medication (oral or injectable) or phototherapy.

The 30-minute online study completed by eligible respondents was conducted in December 2007 by Ipsos Interactive Services. Ethics approval for conducting the study and for the survey methodology and questionnaire (English and French) was provided by Research Review Board Inc. A range of health-related questions and 2 previously validated health-related quality of life patient-reported outcome instruments (the generic 8-Item Short Form Health Survey and the skin-specific Dermatology Life Quality Index) were included in the survey.^{24,25}

Data collection and analysis

Data were entered into an SPSS database (version 12.0). Coding and data analyses were provided by Ipsos Health and were weighted by sex and region according to 2005 Canadian census statistics. Descriptive statistics were used to report the responses to each question. Proportions were used to present the weighted responses, with N representing the number of people who responded to the question. Correlations between associated variables were calculated using Pearson correlation coefficients. Statistical significance was set at $P < .05$. When conducting a general population survey, the usual target sample size is 1000 survey respondents to achieve a margin of error of 3%. For a study specifically targeting individuals affected by psoriasis, this sample size is difficult to achieve, and therefore a target sample size of 400 was set, which offered an acceptable margin of error.

Figure 1. Selection process for survey respondents: *Exclusion criteria included patient not diagnosed with psoriasis (N = 449), disease not identified as plaque-type psoriasis (N = 261), disease self-reported as very mild or mild psoriasis currently and at its worst in the past 5 years (N = 67), and body surface area involvement of less than 3% AND not affecting at least 1 sensitive area AND patient not currently taking prescribed oral or injectable medication or undergoing phototherapy (N = 80).*



* Respondents from the Ipsos database were provided with the opportunity to be randomly awarded cash and prizes, and those from the ICOM TargetSource database were not offered an incentive but understood that ICOM could contact them by e-mail.

†Of a total sample of 3100, 1845 subjects who reported having psoriasis were available to receive e-mail invitations.

RESULTS

Participants

In summary, 1671 of 3845 invited subjects attempted the survey, with 1371 respondents reaching the prescreening phase (36% overall response rate). A total of 514 qualified respondents completed the survey (**Figure 1**); the survey has been previously described.^{3,22,26} This sample size of 514 has an estimated margin of error of 4.3%, at a 95% level of confidence, assuming that the sample proportion is at least 50% homogeneous. **Tables 1 and 2** summarize the qualified respondents' sociodemographic and psoriasis disease characteristics.

Diagnosis and management

In all provinces except Quebec, psoriasis was most commonly diagnosed and managed by FPs compared with other physician types (**Figures 2 and 3**), including when care was needed after sudden worsening (**Figure 4**). In Quebec, diagnosis and management were predominantly carried out by dermatologists. The trend toward management predominantly by FPs was generally observed

irrespective of reported BSA involvement (<3% or ≥3%). However, respondents reporting BSA involvement of 10% or greater received care from dermatologists (47%) or FPs (45%), and few such respondents reported management by rheumatologists (4%) or other health care professionals (4%). Respondents reported an average of 3 physician visits per year for ongoing management of psoriasis (2.1, 3.5, and 4.9 visits per year for individuals reporting BSA involvement of <3%, ≥3%, and ≥10%, respectively). The proportion of patients satisfied with physician management ranged from 55% to 70% (mean 62%) by region (**Figure 5**). Satisfaction was measured on a 4-point scale; the points were *very satisfied*, *somewhat satisfied*, *not very satisfied*, and *not at all satisfied*. Reports of *very satisfied* or *somewhat satisfied* were grouped together as *satisfaction*.

Practice patterns for treatment of psoriasis and comorbidities

Most respondents reporting current use of over-the-counter (OTC) or prescribed topical therapies indicated their disease was managed mainly by FPs (**Table 3**). Respondents receiving prescription oral or injectable

medications or phototherapy for psoriasis were most often managed by dermatologists.

Prescribed topical and OTC therapies were more common in all regions, while substantially fewer respondents reported receiving phototherapy or prescribed systemic (oral or injectable) medications (Table 4). Most patients (63%) receiving prescription injectable agents indicated they were very satisfied (score of ≥8 on the 10-point Likert scale), compared with only 38% of those

treated with prescription oral therapies, and less than one-quarter of patients using OTC or prescription topical agents or phototherapy. Approximately 15% of respondents were not receiving any treatment at the time of the survey.

High blood pressure, elevated cholesterol or lipid levels, and being obese or overweight were the most common comorbidities reported (Table 5). No significant correlation was found between the prevalence of any single comorbidity and BSA involvement ($r = -0.036$). Of those respondents with reported comorbidities, treatment for high blood pressure was most common (92%), followed by treatment for heart disease (75%) and elevated cholesterol or lipid levels (68%). A substantial proportion of respondents were affected psychologically and reported taking prescription medications for anxiety (54%), insomnia (47%), or depression (61%).

Table 1. Sociodemographic characteristics of survey respondents who satisfied entrance criteria: N = 514.

RESPONDENT CHARACTERISTICS	WEIGHTED VALUES
Mean (SE) age, y	49.7 (0.60)
Sex, n (%)	
• Female (unweighted n = 347)	260 (51)
• Male (unweighted n = 167)	254 (49)
Married or common law, n (%)	356 (69)
Mean (SE) weight, kg	
• Women	79.5 (1.72)
• Men	93.2 (1.33)
Weight > 100 kg, n (%)	95 (18)
Income	
• Mean (SE) annual household income	\$63 050 (\$1777)
• Mean (SE) income of those with very mild or mild psoriasis	\$68 450 (\$3269)
• Mean (SE) income of those with moderate or more severe psoriasis	\$59 550 (\$2387)
• Income < \$30 000, n (%)	107 (21)
• Income \$30 000–\$59 999, n (%)	192 (37)
• Income ≥ \$60 000, n (%)	215 (42)
Employment status, n (%)	
• Employed	314 (61)
• Unemployed	19 (4)
• Student	10 (2)
• Homemaker	43 (8)
• Retired	128 (25)
Education level, n (%)	
• High school or less	142 (27)
• College education	250 (49)
• University education	122 (25)
Regional distribution, n (%)	
• West (unweighted n = 167)	159 (31)
–British Columbia	67 (13)
–Prairie Provinces*	92 (18)
–Alberta	51 (10)
–Manitoba and Saskatchewan	41 (8)
• Central (unweighted n = 298)	318 (62)
–Ontario	195 (38)
–Quebec	123 (24)
• Atlantic Provinces [†] (unweighted n = 49)	36 (7)

SE—standard error.

*Prairie Provinces include Alberta, Manitoba, and Saskatchewan.

[†]Atlantic Provinces include Nova Scotia, Newfoundland and Labrador, New Brunswick, and Prince Edward Island.

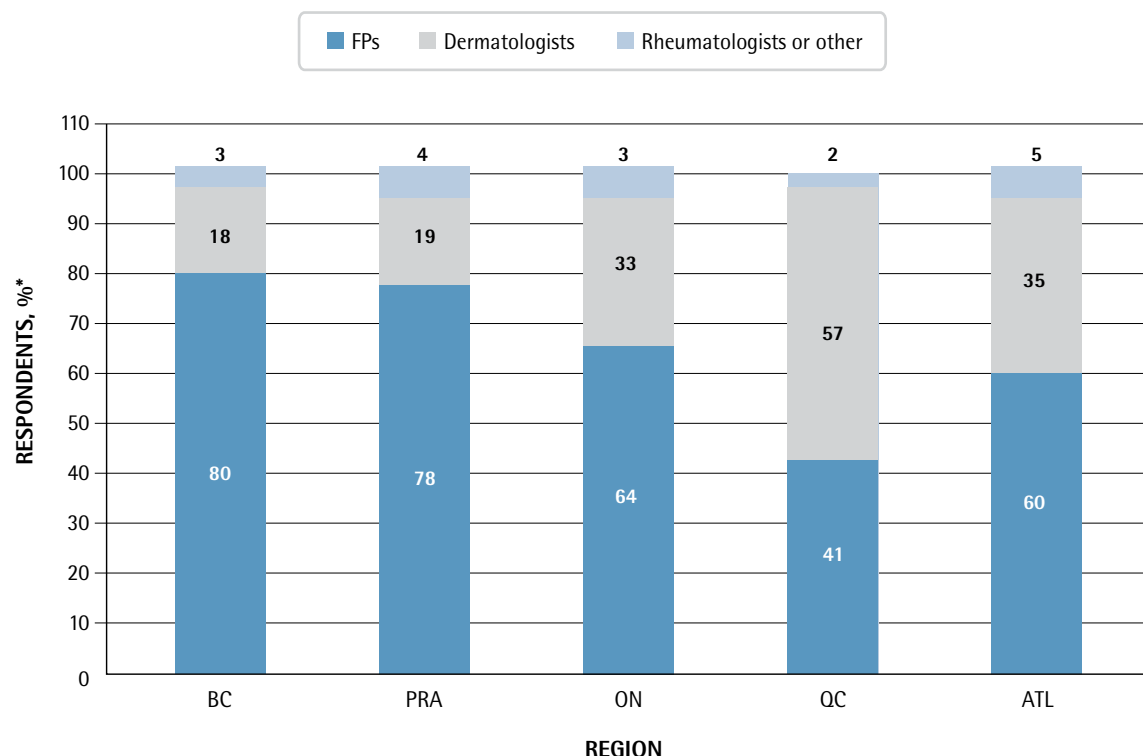
Table 2. Disease characteristics of survey respondents who satisfied entry criteria for study: N = 514.

DISEASE CHARACTERISTICS	RESPONDENTS, WEIGHTED %
Self-reported current severity	
• Very mild	12
• Mild	23
• Moderate	45
• Severe	16
• Very severe	4
Self-reported severity (at worst in past 5 y)	
• Moderate	36
• Severe	36
• Very severe	18
• More than very severe	10
BSA involvement (at worst in past 5 y)	
• < 3%	38
• 3% to < 10%	38
• ≥ 10%	24
BSA involvement (≥ 3% in past 5 y)	
• British Columbia	9
• Prairie Provinces*	11
• Ontario	22
• Quebec	15
• Atlantic Provinces [†]	5
Associated psoriatic conditions	
• Nail psoriasis	40
• Psoriatic arthritis	23

BSA—body surface area.

*Prairie Provinces include Alberta, Manitoba, and Saskatchewan.

[†]Atlantic Provinces include Nova Scotia, Newfoundland and Labrador, New Brunswick, and Prince Edward Island.

Figure 2. Type of physician making first diagnosis of psoriasis by region as reported by survey respondents: $N = 514$.

ATL—Atlantic Provinces (Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador),
 PRA—Prairie Provinces (Manitoba, Saskatchewan, and Alberta).

*Totals add to more than 100% owing to rounding.

Table 3. Health care professionals visited most often for psoriasis treatment according to treatment received at the time of the survey: $N = 514$.

SELF-REPORTED TREATMENT RECEIVED	HEALTH CARE PROFESSIONAL, %			
	FP	DERMATOLOGIST	RHEUMATOLOGIST	OTHER
Over-the-counter medication	55	38	4	3
Prescribed topical medication	61	35	3	1
Prescribed oral medication	24	42	30	5
Phototherapy	21	74	2	3
Prescribed injectable medication	11	71	18	0

Across Canada, about one-third of the total prescription costs were paid out of pocket (after reimbursements). Total monthly expenses incurred for prescription and OTC treatments for psoriasis were reported to range from \$32 to \$80 depending on the region.

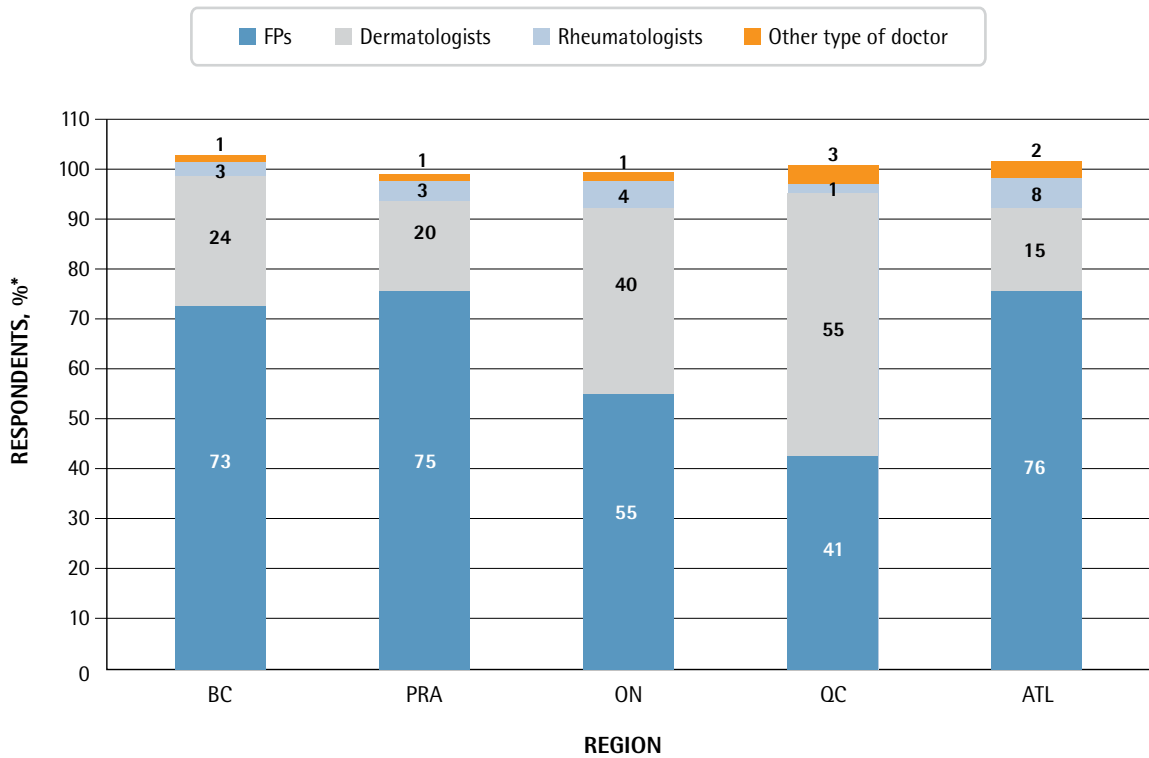
DISCUSSION

Our survey results support the role of FPs in providing ongoing care for patients with moderate to severe

plaque psoriasis. Current partitioning of care between FPs and other specialists, including treatment patterns for psoriasis and prevalent comorbidities, emphasizes the importance of efficiency and continuity in the referral and comanagement of this patient population.

More than half of respondents (62%) reported they were satisfied with their physician care, which is a rate greater than that observed in a US study.²⁷ Family physicians were reported to be the main providers for diagnosis and ongoing care across Canada. A unique trend was observed for Quebec; dermatologists were the main

Figure 3. Type of physician seen most often for psoriasis by region as reported by survey respondents: N = 514.



ATL—Atlantic Provinces (Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador),
 PRA—Prairie Provinces (Manitoba, Saskatchewan, and Alberta).
 *Totals add to more than 100% owing to rounding.

Table 4. Current psoriasis treatments reported by respondents, by region, and proportion of respondents very satisfied with current treatments: Respondents could select multiple treatments.

TREATMENT	PROPORTION OF PATIENTS RECEIVING TREATMENT (N = 514)	PROPORTION OF PATIENTS REPORTING THEY WERE VERY SATISFIED* WITH TREATMENT	USAGE BY REGION OF CANADA (N = 514), %				
			BRITISH COLUMBIA	PRAIRIE PROVINCES [†]	ONTARIO	QUEBEC	ATLANTIC PROVINCES [‡]
Over-the-counter medication	33	17	33	25	36	32	45
Prescribed topical medication	61	22	58	62	66	51	72
Phototherapy	7	21	2	5	6	13	10
Prescribed oral medication	8	38	9	5	7	10	20
Prescribed injectable medication	5	63	5	1	5	7	2
Other	8	NA [§]	5	11	8	6	8
None	15	NA [§]	17	21	13	18	5

NA—not available.

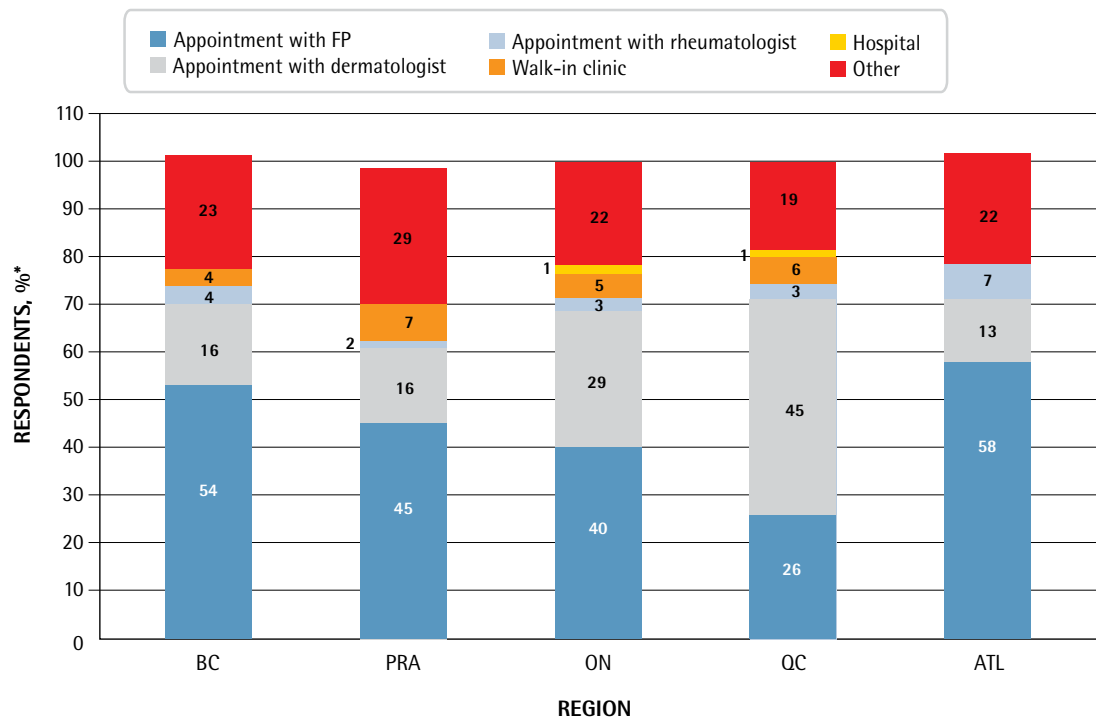
*Very satisfied was indicated by selection of 8, 9, or 10 on a 10-point scale, with 1 indicating *not at all satisfied* and 10 indicating *extremely satisfied*.

[†]Prairie Provinces include Alberta, Manitoba, and Saskatchewan.

[‡]Atlantic Provinces include Nova Scotia, Newfoundland and Labrador, New Brunswick, and Prince Edward Island.

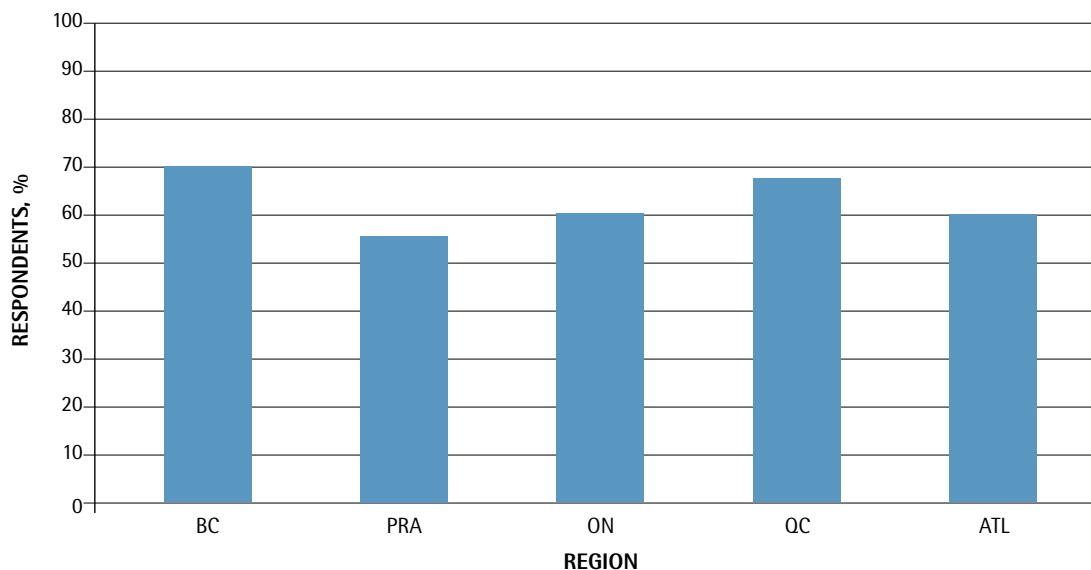
[§]Level of satisfaction with current therapies was not surveyed in those selecting the options *Other* or *None*; therefore, n = 436.

Figure 4. Action taken by respondents upon sudden worsening of symptoms of psoriasis, by region: N = 514.



ATL—Atlantic Provinces (Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador),
 PRA—Prairie Provinces (Manitoba, Saskatchewan, and Alberta).
 *Totals add to more than 100% owing to rounding.

Figure 5. Proportion of patients who were satisfied with physician management, by region, as reported by survey respondents: N = 514.



ATL—Atlantic Provinces (Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador),
 PRA—Prairie Provinces (Manitoba, Saskatchewan, and Alberta).

Table 5. Respondents with comorbidities who reported receiving treatment for the comorbid condition, according to BSA involvement: N = 514.

COMORBIDITY	RESPONDENTS WITH COMORBIDITIES, N (%)	CURRENTLY RECEIVING TREATMENT FOR COMORBIDITIES, %		
		TOTAL	BSA < 3%	BSA ≥ 3%
Obese or overweight	164 (32)	4	7	3
High blood pressure	154 (30)	92	94	90
Elevated cholesterol or lipid levels	134 (26)	68	70	66
Psoriatic arthritis	118 (23)	53	50	55
Depression	97 (19)	61	60	61
Insomnia or other sleep disorders	93 (18)	47	43	49
Anxiety	93 (18)	54	47	58
Osteoarthritis	79 (15)	50	45	52
Diabetes	71 (14)	66	76	61
Heart disease	51 (10)	75	60	87
Rheumatoid arthritis	33 (7)	36	37	34
Cancer	24 (5)	8	0	18
Inflammatory bowel disease	20 (4)	51	54	48

BSA—body surface area.

providers for diagnosis and ongoing care, similar to the practice patterns reported in the United States.^{28,29} This might be attributable to increased access to specialists, as suggested by the shorter wait times for specialist consult and alternate referral channels (eg, self-referral, referral through health care providers other than FPs) and possibly a greater number of dermatologists per resident in Quebec (Royal College of Physicians and Surgeons of Canada, personal communication, August 2010).^{30,31} Whether differences in practice patterns in Quebec compared with the rest of the Canadian provinces translate to differences in patient satisfaction would be important to explore in future studies. The overall number of clinic visits (3 times per year) for ongoing management of psoriasis was similar to that found in a UK study³² and was consistent with other findings in the United States and United Kingdom, which showed that while individuals with psoriasis do not frequently attend clinics, their use of medical resources remains substantial.³²⁻³⁴

Current psoriasis guidelines recommend prescription oral or injectable medications or phototherapy as primary treatment for moderate to severe psoriasis or extensive lesions, while topical agents generally serve an adjunctive role.^{11,35} Most of our survey respondents reported current treatment with topical agents, consistent with previous findings that the use of such therapies might be disproportionately and inappropriately high for the optimal treatment of moderate to severe psoriasis.^{27,36} Respondents indicated relatively low satisfaction with topical agents and phototherapy compared with systemic therapies (oral and injectable), similar to findings from a recent Canadian survey reporting increased patient satisfaction with biologic therapy use compared

with other therapies.³⁷ Although the physicians who prescribed these topical treatments were not identified in the present survey, respondents visiting FPs for ongoing care of psoriasis were more likely to be using topical agents, consistent with findings from a UK study.³² Use of systemic (oral or injectable) medications or phototherapy was more prevalent among respondents who reported visiting dermatologists or rheumatologists for ongoing psoriatic disease management. The decision by FPs to prescribe primarily topical agents might depend on such factors as limited access to specialized treatments (eg, phototherapy or light therapy),³⁸ familiarity and comfort with prescribing systemic therapies,²⁸ perceived risk of interactions with concomitant medications,¹² or costs to the patient.^{39,40}

Our finding that FPs served as the primary source of ongoing management for respondents reporting moderate to severe psoriasis (BSA involvement of ≥3%), and that they shared in the care of those with severe psoriasis (BSA involvement of ≥10%), has important implications for the care and referral of Canadians with psoriasis. First, with partitioning of services between primary and specialist care settings, the efficiency of interphysician communication is critical to the coordination and continuity of management of psoriasis⁹ and other associated psychosocial and systemic comorbidities.^{41,42} Second, referrals guided by criteria recommended in the recent Canadian plaque psoriasis guidelines might help optimize the sharing of care between primary and secondary practices (**Box 1**).¹¹ Third, the high prevalence of comorbidities and their associated treatments supports recommendations for monitoring, intervention, and consideration of possible multidrug interactions during

patient management.^{11,12,43,44} Fourth, with skin manifestations of psoriasis generally appearing years before the onset of psoriatic arthritis,^{45,46} early detection of joint complaints and prompt diagnosis and intervention might be critical for detection of eventual progressive joint destruction.^{43,47,48} Finally, the prevalence of mental health disorders that respondents attributed to psoriasis supports the importance of monitoring for psychological issues and providing appropriate counseling and treatment or referral to a specialist.¹¹

Limitations

Limitations of this study included a sample population derived from a pre-existing consumer panel rather than by random sampling. The consumer panel was constructed to represent the general Canadian population, but no eligible panelists lived in the territories. As a result, the territorial population was not represented, although it is known that most Canadians (99.68%) reside within the provinces.⁴⁹ Of note, population samples were low in certain provinces, and caution must be exercised when drawing conclusions based on the provincial trends observed. The use of a consumer panel, as well as Internet-based methods of survey delivery, introduces a number of potential biases including selecting for individuals who are computer literate, have access to the Internet, are able and willing to devote time to online surveys, and might be more frustrated about their condition.^{50,51} The survey relied on the accuracy of self-report, and responses were not confirmed by medical records, although a previous study suggested that self-reporting in population surveys is reasonably accurate for chronic conditions,⁵² and patient-reported BSA involvement correlates closely with physician estimates.⁵³

Conclusion

In this Canadian population with moderate to severe plaque psoriasis, FPs were reported to play an important role in diagnosis and ongoing management of the condition. Treatments received depended largely on whether management was in the primary or secondary care setting. Findings highlight the need to consider comorbidities and associated medications when treating patients with psoriasis, and the importance of an integrated “shared care” approach to management that includes the coordination of care with specialists and other health care professionals, as well as consideration of patients’ needs and preferences. 🌿

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Contributors

All authors contributed to the design of the study, the analysis and interpretation of data, and review of the manuscript, with **Dr Bernstein** contributing to analysis and interpretation of data and drafting of the manuscript.

Competing interests

Dr Poulin has been a speakers’ bureau member and trialist for Amgen-Wyeth, Abbott, Astellas-Biogen, Centocor, Schering, Janssen-Ortho, Bristol-Myers Squibb, Celgene, Isotechnika, LeoPharma, Pfizer, Serono, and Pharmascience. **Drs Papp and Bernstein** are consultants for Janssen Inc. **Dr Wasel** has been a consultant and speaker for or received honoraria from Abbott, Amgen, Astellas, Biogen, EMD Serono, Isotechnika, Janssen-Ortho, LEO Pharma, Schering, and Wyeth. **Dr Chan, Ms Andrew, and Ms Fraquelli** are employees of Janssen Inc. The survey was supported by Janssen-Ortho Inc. Other than **Dr Bernstein**, who received consulting fees, the authors did not receive any honoraria from Janssen-Ortho Inc for their work on this paper.

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