

Report

A Canadian online survey to evaluate awareness and treatment satisfaction in individuals with moderate to severe plaque psoriasis

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Abstract

Background Psoriasis is a chronic inflammatory disease associated with comorbidities and decreased quality of life. This survey is aimed to better understand the impact of disease on Canadian patients, and to examine awareness and use of available treatment options.

Methods An online survey was conducted using a consumer panel. Eligible subjects reported diagnoses of psoriasis and moderate/severe/very severe plaque psoriasis within the past 5 years, and either: psoriasis covering $\geq 3\%$ of body surface area; psoriasis on a sensitive area, or current use of systemic and/or phototherapy or light therapy for psoriasis.

Results A total of 514 panelists completed the survey; 65% reported current moderate/severe/very severe psoriasis. Awareness of available treatment options ranged from 98% for prescription topical agents to 75% for photo/light therapy, and $< 50\%$ for prescription oral (49%) or injectable (35%) medications. A total of 92% of respondents had been treated with and 61% were currently taking prescription topical agents. Photo/light therapy had been used by 38% and was currently used by 7% of respondents. Prescribed oral medication had been taken by 25% and was currently used by 8%. Few subjects had been treated with injectables in the past (10%) or currently (5%). Overall, 24% of respondents were very satisfied with their current treatment. A total of 63% of respondents taking injectables were very satisfied, compared with 38% of those taking prescribed oral medication and 21% of those receiving photo/light therapy.

Conclusions Most respondents with moderate to severe psoriasis were unaware of all treatment options; systemic treatments were not commonly utilized. Treatment satisfaction rates were low, highlighting the need to ensure greater patient education on and use of available therapeutic options.

Introduction

Psoriasis is a chronic, systemic inflammatory disease with a prevalence that varies worldwide. Although generally reported to affect 1–3% of Canadians,^{1,2} its prevalence may extend to 4.7%.³ A similar range of 2–4.6% is reported for the USA.³ Psoriasis is associated with a negative impact on quality of life (QoL)^{4,5} and an increased risk for comorbidities, including cardiovascular disease, depression, diabetes, and psoriatic arthritis,⁶ the last of which affects 6–42% of people with psoriasis.⁷ Increased risk of mortality has been shown with severe disease.^{8,9} Although there are a number of treatment options available for patients with psoriasis, it remains incurable. Many of the traditional therapies in use for decades, such as methotrexate and cyclosporine, are associated with tolerability issues,^{10–13} and topical therapies may have limited long-term efficacy in extensive disease and be inconvenient to apply.¹⁴ A novel class of “targeted” systemic agents, “biologicals”, which first received Health Canada approval for moderate to severe psoriasis in 2004,¹⁵ show promise for greater treatment efficacy and longer-term studies on efficacy and safety are ongoing.^{16–18} Traditional treatment paradigms involved a stepwise approach in which topical therapies are initially prescribed, followed by phototherapy or light therapy and systemic oral and then injectable agents.¹⁹ Current thinking favors individualized prescribing of treatments in which clinical assessment of severity, such as measures of body surface area (BSA) involvement, is considered along with psychosocial health, QoL, location of plaques in sensitive areas, historical severity, and patient perspectives and values.^{14,19–22}

Previous studies of individuals with psoriasis have revealed widespread dissatisfaction with treatments received, as well as frustration with current management strategies, the need for more appropriate forms of therapy,^{23–25} and improved health care access and coverage.^{26,27} In view of the limited Canadian data available, this survey aimed to facilitate better understanding of the severity and impact of psoriasis on Canadian patients. The study details the therapies received, level of satisfaction, and awareness of current treatment options in a Canadian population of individuals with moderate to severe plaque psoriasis.

Materials and methods

A reliable population-wide, cross-sectional sample, representative of the adult Canadian population balanced by region and gender, was achieved through the utilization of proprietary databases owned by Ipsos Canada (Database A) and ICom TargetSource™ (Database B).²⁸ These databases are comprised of members of the general public who agreed to

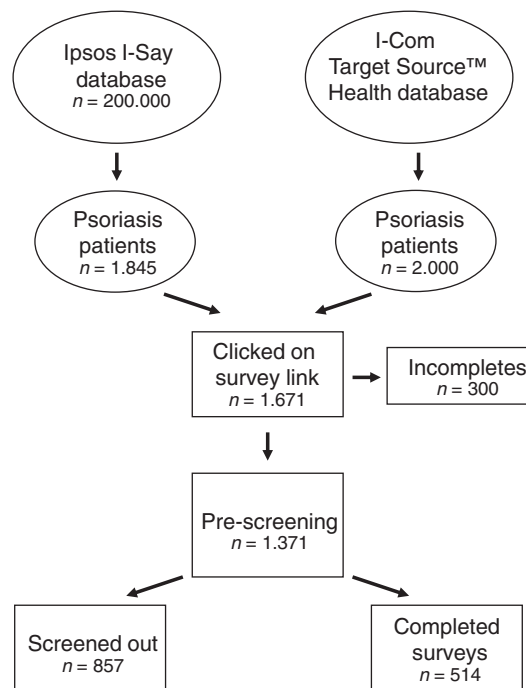


Figure 1 Schematic illustrating the selection process of respondents for the survey [Reprinted with permission from BC Decker].²⁸ Of 3,100 individuals in the I-Say Database reported to have psoriasis, 1,845 were available during the study to receive an e-mail invitation. Reasons for respondents screening out: not diagnosed with psoriasis ($n = 449$); not identified as plaque-type psoriasis ($n = 261$); self-reported as very mild/mild psoriasis, currently and at its worst during previous 5 years ($n = 67$); body surface area of $< 3\%$ AND not affected on at least one sensitive area AND not currently taking prescribed oral/injectable medication or photo/light therapy ($n = 80$)

be contacted and to complete surveys on a volunteer basis.^a A sample population of 3845 pre-screened, self-defined Canadian adults (aged ≥ 18 years) with self-reported psoriasis derived from Database A ($n = 1845$) and Database B ($n = 2000$) were invited by e-mail to participate in the survey. The target sample size was 400 individuals with moderate to severe plaque psoriasis (Fig. 1). The total number of qualified respondents who completed the survey was 514.

Survey methodology

The survey methodology and questionnaires in English and French were approved by an Ethics Committee in November

^aSubjects who participated in the survey were given the opportunity to be awarded randomly in both cash and prizes, as per the “Ipsos I-Say Rewards Program”. Respondents from Database B were not offered an incentive and understood that ICom could contact them by e-mail.

2007. The online survey (Appendix S1, supporting information), conducted for 2 weeks in December 2007, was designed to take approximately 30 minutes to complete and included screening questions to determine eligibility for entrance into the study. Eligible subjects reported a diagnosis of psoriasis by a physician, at least moderate disease currently or in the past 5 years, and plaque-type psoriasis through recognition of visual images and description. In addition, subjects were required to meet at least one of the following criteria: minimum, self-assessed BSA involvement of $\geq 3\%$ within the past 5 years using the palm method (i.e. palm of the hand $\approx 1\%$ BSA);^{24,29,30} the presence of psoriasis on a sensitive area of the body (any one of the hands, feet, scalp, face, or genitals);^{31,32} or current receipt of prescription oral and/or injectable medication or photo/light therapy for psoriasis.

Survey questions included a broad range of subjective health-related questions related to treatments, sociodemographics, health profile, and QoL.

Statistical analysis

Data were entered into SPSS databases and analyzed by Ipsos using SPSS Version 12.0 (SPSS, Inc., Chicago, IL, USA). Population data were weighted to correct for response bias. Descriptive statistics were used to describe the responses to each question. Percentages represent the weighted responses, with n representing the number of people questioned. The correlation between associated variables was calculated using Pearson's correlation coefficient. Statistical significance levels were set at $P < 0.05$.

Results

Respondent demographics and disease characteristics (Tables 1 and 2, respectively), revealed a mean age of 49.7 years and a male:female ratio of 1:1 after weighting (1:2 unweighted). Overall, 65% of respondents reported moderate, severe, or very severe disease at the time of the survey (Table 2). When considering their psoriasis at its worst during the previous five years, 62% of respondents estimated a BSA involvement of $\geq 3\%$, and 24% reported psoriasis affecting $\geq 10\%$ of BSA. Self-reported severity of psoriasis correlated with estimates of BSA involvement in psoriasis at its worst during the previous five years [Pearson's correlation coefficient (r) = 0.17548, $P < 0.0001$]. Nearly all subjects (96%) reported psoriasis affecting a "sensitive area" on the body (i.e. scalp, hands, feet, face, or genitals) and the most common symptoms included scaling (69%), skin redness (61%), and itchiness or a sensation of burning (51%).

Nearly all respondents reported current and/or past use of prescribed or over-the-counter (OTC) topical therapies for treatment of psoriasis and, to a much lower extent, photo/light therapy and/or prescription (oral/injection)

Table 1 Sociodemographic characteristics of survey respondents who satisfied the study entrance criteria ($n = 514$) [weighted mean \pm standard error (SE) or weighted percentage of respondents]

Demographics of respondents	Values, weighted, mean \pm SE or %
Age, years	49.7 \pm 0.597
Gender, % female	51%
Body mass index, kg/m ²	
Males	29.4 \pm 0.382
Females	30.0 \pm 0.495
Annual household income, Can\$	63 050 \pm 1777
Very mild/mild severity	68 450 \pm 3269
Moderate or more severe	59 550 \pm 2387
Married/common law	69%
Employment status	
Employed	61%
Unemployed	4%
Student	2%
Homemaker	8%
Retired	25%
Education level	
High school or less	27%
College education	49%
University education	25%

Table 2 Disease characteristics [including treatment(s) received] of survey respondents who satisfied the study entrance criteria ($n = 514$). Self-reported severity and treatment received

Disease characteristics and treatments	Proportion of respondents, %; weighted
Reported severity (current)	
Very mild	12
Mild	23
Moderate	45
Severe	16
Very severe	4
Reported severity at worst in previous 5 years	
Moderate	36
Severe	36
Very severe	18
More than very severe	10
Comorbidities	
Obesity/being overweight	32
High blood pressure	30
Elevated cholesterol/lipids	26
Depression	19
Anxiety	18
Insomnia or other sleep disorders	18
Current treatments	
Prescribed creams/lotions/gels	61
Over-the-counter treatments	33
Photo/light therapy	7
Prescribed oral medications	8
Prescribed injectable medications	5

Figure 2 Proportion of respondents currently or ever receiving different categories of therapy, by body surface area involvement (*n* = 514). OTC, over-the-counter; BSA, body surface area

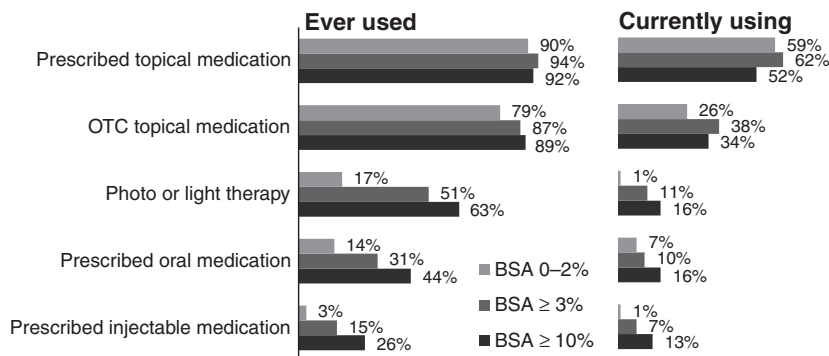


Table 3 Proportion of respondents aware of different categories of therapy, by body surface area (BSA) involvement

Current therapy	Total (<i>n</i> = 514)	Affected BSA 0-2% (<i>n</i> = 202)	Affected BSA ≥ 3% (<i>n</i> = 312)	Affected BSA ≥ 10% (<i>n</i> = 113)
OTC therapy	82%	73%	88%	90%
Prescribed topical therapy	98%	97%	98%	99%
Photo/light therapy	75%	67%	80%	88%
Prescribed oral therapy	49%	34%	59%	68%
Prescribed injectable medications	35%	21%	44%	61%

OTC, over-the-counter; BSA, body surface area

medication (Fig. 2). The use of prescribed and OTC topical therapies was consistently high irrespective of BSA coverage, corresponding to a high level of awareness of prescribed and OTC topical therapies among the surveyed population (Table 3). Both utilization and awareness of photo/light therapy and prescription oral or injectable medication was significantly lower overall and increased with greater BSA coverage (Fig. 2, Table 3). A total of 82% of respondents who reported moderate to severe psoriasis at the time of the survey indicated they were not currently receiving treatment with photo/light or systemic (prescription oral or injectable) therapy, and 15% of respondents overall reported using no form of treatment. Although the majority of individuals overall were not receiving systemic therapies, over half of respondents indicated a willingness to consider treatments in the form of pills or injections (82% and 55%, respectively). Willingness to consider such forms of therapy was associated with the severity of psoriasis; with increasing BSA involvement (0-2%, ≥ 3% and ≥ 10%), more respondents reported a willingness to consider oral (73%, 87% and 89%) or injection-based (43%, 62% and 71%) therapy, respectively.

Table 4 Proportion of respondents very satisfied^a with current treatments for psoriasis

Current therapy	Respondents	
	<i>n</i>	%
Total on therapy	436	24
OTC therapy	178	17
Prescribed topical therapy	316	22
Prescribed oral therapy	46	38
Photo/light therapy	35	21
Prescribed injectable medications	24	63

^a“Very satisfied” was defined by a rating of ≥ 8 on a scale of 1-10, where 1 = not at all and 10 = extremely satisfied with current treatments received. OTC, over-the-counter.

Satisfaction with current treatments was generally low; 24% of respondents reported they were “very satisfied” (score ≥ 8) with their current medication (Table 4). Satisfaction with medication decreased with increasing severity of psoriasis; 39% of those with very mild/mild psoriasis reported they were “very satisfied”, compared with 16% of those with moderate/severe/very severe psoriasis. Respondents receiving injectable or oral medications were more likely to report they were “very satisfied” with current treatments for psoriasis (63% and 38%, respectively) compared with those receiving prescribed topical therapy (22%), photo/light therapy (21%), or OTC therapy (17%). Dissatisfaction with the efficacy of current and past treatment was highlighted by the majority of respondents reporting that “No medication works really well for my psoriasis” (68%). Only 39% agreed with the statement “Medication eases my psoriasis significantly”. Agreement with the statement “Medication has been very ineffective for my psoriasis” was more frequently reported by individuals with more severe disease (49%, 69%, and 77% of respondents with 0-2%, ≥ 3%, and ≥ 10% BSA involvement, respectively), as was “I am

concerned about side effects from medication to treat psoriasis" (54%, 64%, and 69% of respondents with 0–2%, $\geq 3\%$, and $\geq 10\%$ BSA involvement, respectively). When prompted about possible reasons for the discontinuation of treatment in the past, respondents most commonly reported a lack of efficacy (60%) and inconvenience (23%). Other reasons included improvement of symptoms (22%), concern over side effects (20%), cost (14%), and doctor's advice (14%). The primary reason for discontinuing prescribed topical therapies, reported by over half of all respondents (56%), was the lack of efficacy of such treatments.

Although the average duration of living with psoriasis was > 21 years, a majority of respondents (64%) agreed with the statement "I wish I had more information about psoriasis", and 42% reported seeking information related to psoriasis in the six months prior to the survey. The source of information most frequently cited by respondents was the Internet (83%), followed by brochures and materials from doctors' offices or pharmacists (47%), articles in magazines and newspapers (35%), information received in the mail (30%), television news or documentary programs (14%), patient associations or foundations (14%), radio news or documentary programs (7%), and other sources (10%). Individuals with more severe disease were more likely to search for information, as did 54% of individuals with $\geq 10\%$ BSA involvement, and 46% and 36% of those with $\geq 3\%$ and 0–2%, respectively, of BSA affected. Individuals receiving treatments such as photo/light therapy or prescription medication (oral and/or injection) were also more likely to seek information (52%) compared with those who did not receive such forms of therapy (40%).

Discussion

Overall findings suggest that many respondents did not receive forms of treatment commensurate with the severity and extent of disease as per current treatment guidelines or consensus statements.^{11,20,32,33} This may be the reason why respondents reported an overall dissatisfaction with current therapies, a perceived lack of efficacy of available treatments, and the need and desire for more information about their condition and possible treatment options. Such reasoning is further supported by findings that some respondents were currently not receiving any treatment for their condition, and the majority received only prescribed topical or OTC therapies, which appears to be inconsistent with the optimal management strategies recommended for individuals affected with moderate to severe forms of psoriasis.^{11,33}

The widespread use of topical therapies is consistent with findings in other population studies, demonstrating

that the use of these agents may be disproportionately high in individuals with moderate to severe psoriasis.^{23,30,34–36} This may be explained in part by the role of such therapies in combination or rotational treatment and as adjunct treatment of recalcitrant lesions at all levels of BSA involvement.¹⁰ Such prevalent use of topical agents may also reflect the traditional view of psoriasis as largely a "cosmetic" skin disease, as opposed to a systemic autoimmune inflammatory condition that requires an integrated approach to management including a consideration of comorbidities, psychosocial health, and patient QoL.^{9,37} Physicians may avoid prescribing photo/light or systemic therapies as a result of inadequate training on and experience in the use of these treatments, limited accessibility to the resources and equipment needed, or reluctance to monitor and manage potential adverse effects.²³ Respondents themselves may resist treatment with photo/light therapy or systemic medications because of concern about potential adverse effects, inconvenience, or method of administration.^{16,23,37} Inconvenience and side effects were reported as frequent motives for treatment discontinuation in the present study. The willingness of respondents (particularly those with severe disease) to consider oral or injectable therapies suggests that such methods of administration may not present major obstacles to initiating systemic therapy.

A substantial proportion of individuals expressed general dissatisfaction with current therapies, particularly those with greater severity of psoriasis, as reflected in other published studies.^{23–25,30} Respondents' motives for discontinuing therapy were consistent with reasons for dissatisfaction with treatment reported elsewhere (e.g. perceived lack of efficacy, side effects, inconvenience).³⁸ A perceived lack of efficacy is consistent with the agreement of a majority of respondents with the statements "No medication works really well for my psoriasis" and "Medication has been very ineffective for my psoriasis", and could perhaps be attributed to the need for more aggressive treatment in this patient population.²³ Correspondingly, a major reason for treatment discontinuation, as reported by over half of respondents receiving topical agents, was a perceived lack of efficacy. Importantly, individuals receiving photo/light therapy or systemic treatments were more likely to report satisfaction with therapy compared with those receiving prescription topical and/or OTC therapies. Of the various treatment options, respondents most frequently reported an awareness of topical agents, followed by photo/light therapy and then systemic medications, as found elsewhere.²³ Individuals with greater severity of psoriasis were more likely to report an awareness of systemic or photo/light therapy, which suggests that individuals with severe disease are more likely to discuss such forms of therapy with

their physicians. Nevertheless, previous findings suggest that discussion of photo/light or systemic therapies with a physician occurs far more frequently than actual treatment with such modalities.²³ There was an apparent desire on the part of respondents in the present study for more information on their disease and treatment options, with many seeking information through Internet searches or literature available through their physicians' offices. Effective patient education is critical,³⁹ as is strengthening communication between patients and physicians, which should include a joint decision-making process and the selection of appropriate treatment options to improve overall management.^{23,32,39,40}

Limitations to this study, as detailed elsewhere,^{28,41} include the use of pre-existing Canadian consumer panels and databases. Although these databases are developed with the intention that they should be representative of the general population, it should be noted that study subjects were not randomly sampled and may not necessarily be truly representative of the Canadian population. Results from the study are preliminary estimates meant to complement, rather than replace, a national epidemiologic survey. The mean age of respondents (49.7 years) was somewhat greater than the median age of 39.5 years reported in 2006 census data⁴² and is consistent with the middle-aged population (median age: 54 years) reported in a similar US psoriasis population survey.²³ The mean household income of respondents (Can\$63,050) was comparable with that of the general population reported in Canadian census data⁴³ and in a US-based survey of individuals with psoriasis.²³ Respondents were predominantly female, with a 2:1 female:male ratio, although psoriasis is equally prevalent in males and females,⁴⁴ which may reflect a greater tendency for females to report the disease in population-based surveys.²⁴ Lower rates of employment (61%) and unemployment (4%) were reported here compared with Canadian labor force survey data for 2007 (64% and 6%, respectively).⁴⁵ The rate of attainment of university-level education was similar to that reported for the Canadian general population.⁴⁶ Because this was a survey-based population study, results were dependent on self-report, which has been found to be reasonably accurate in other studies of chronic conditions.⁴⁷ Estimation of BSA by respondents using the palm method has been applied previously in other survey-based studies of individuals with psoriasis and found to correlate closely with physician-reported BSA.^{23,48} Respondents' recall of treatments and severity may be prone to bias, although there was a significant correlation between self-reported severity of psoriasis and estimated BSA involvement during the previous five years. Standard definitions for moderate, severe, and very severe psoriasis were not provided to subjects, and the level of severity documented in the study was "as perceived" by the

patient. This served to provide a relative distribution of severities among respondents but may have implications for the classification of disease. It should be noted, however, that controversy surrounds the precise definition of moderate to severe psoriasis and how best to categorize clinical severity.^{11,20} Sources of sampling bias inherent to the survey methodology include: (i) individuals frustrated with their condition⁴⁹ and/or dissatisfied with therapy may be more likely to participate, and (ii) respondents reflect an online population consistent with the demographics of high Internet use in Canada⁵⁰⁻⁵² and may be more likely than the general population to seek information on psoriasis. Finally, the pattern of treatment use over time was not identified in this study, although disease severity may fluctuate along with its impact on patients.²¹

Overall findings revealed a predominant use of topical and OTC treatments in surveyed Canadians reporting moderate to severe psoriasis, which suggests the underutilization of treatment options such as photo/light or systemic therapies in this patient population. The dissatisfaction of respondents with current therapies, the perceived lack of efficacy of treatments received, and the desire of respondents to seek out information on the disease and its treatment options suggest a need to consider a broad range of available therapies as well as to improve patient understanding of the disease and available treatment options.

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Supporting Information

Additional supporting information may be found in the online version of this article.

Appendix S1. Survey Questionnaire for Psoriasis Sufferer Impact Study.

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