

Referral Patterns and Training Needs in Psychiatry among Primary Care Physicians in Canadian Rural/Remote Areas

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Abstract

Objectives: This study examined the referral patterns of rural/remote primary care physicians (PCPs) as well as their needs and interests for further training in child/adolescent mental health. **Methods:** Surveys were mailed to Canadian rural/remote PCPs requesting participants' demographic information, training and qualifications, referral patterns, and identification of needs and interests for continuing medical education (CME). **Results:** PCPs were most likely to refer to mental health programs, and excessive wait times are the most common deterrent. Major reasons for referral were to obtain recommendations regarding medications and assessing non-responsive patients. While PCPs expressed higher levels of confidence in making appropriate referrals, they were much less confident in their knowledge and skills in managing mental health problems. Professional development in child/adolescent psychiatry is a moderate or highly perceived CME need. Overall, attention deficit/hyperactivity disorder (ADHD) was the most commonly chosen topic of interest and CME in the community was preferred, but some regional differences emerged. **Conclusions:** PCPs viewed limited community resources and self-identified gaps in skills as barriers to service provision. Professional development in child and adolescent mental health for PCPs by preferred modes appears desired.

Key words: *needs assessment, rural/remote, primary care physicians, mental health, professional development, psychiatry, child/adolescent*

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Résumé

Objectif: étudier les schémas de référence des médecins de première ligne dans les régions rurales ou éloignées, leurs besoins et intérêts quant à la formation en santé mentale de l'enfant et de l'adolescent. **Méthodologie:** des généralistes canadiens exerçant en régions rurales ou éloignées ont rempli un questionnaire documentant leur âge, leur formation, leurs qualifications, leurs schémas de référence, leurs besoins en matière d'éducation médicale continue et leurs domaines d'intérêt. **Résultats:** les médecins référaient majoritairement dans les programmes de santé mentale et considéraient la longueur des listes d'attente comme le principal facteur de dissuasion. Leurs questions portaient principalement sur des recommandations en matière de médicaments et sur l'évaluation des patients qui ne répondaient pas au traitement. Les médecins avaient davantage confiance dans la pertinence de leurs références que dans leurs connaissances en santé mentale ou dans leur aptitude à gérer les problèmes de santé mentale. Ils accordaient une importance moyenne ou élevée à la formation professionnelle en psychiatrie de l'enfant et de l'adolescent. Dans l'ensemble, le TDAH était le thème qui était le plus en demande et la formation médicale continue dans la communauté avait la préférence des médecins, malgré certaines différences régionales. **Conclusion:** les médecins de première ligne estiment que les ressources communautaires sont limitées et que les déficiences qu'ils constatent dans leur formation constituent des obstacles à la prestation des services. Il est souhaitable de mettre sur pied des programmes de formation professionnelle en santé mentale de l'enfant et de l'adolescent qui tiennent compte des préférences des médecins de première ligne.

Mots-clés: évaluation des besoins, régions rurales ou éloignées, médecins de première ligne, santé mentale, formation professionnelle, psychiatrie, enfant et adolescent

Introduction

Child and adolescent mental health problems are the leading and most chronic health problems that Canadian children face after infancy (Kelleher & Stevens, 2009), causing extensive morbidity and mortality throughout the lifespan (Health Canada, 2002; Kelleher & Stevens, 2009). It is estimated that 14% of Canadian children and youth under 20 years old suffer from mental health conditions that affect their daily lives, and paediatric mental health problems are predicted to increase by 50% by the year 2020 (Canadian Paediatric Society, 2007).

Primary Care Physicians (PCPs) (i.e., family physicians/paediatricians) play a pivotal role in the recognition and management of child/youth mental health problems given that approximately 75% of them are first seen in their primary care settings (Miller, 2007). Studies have reported prevalence rates of 19% to 42% of clinical or sub-threshold mental health problems are seen in primary care (Brown, Riley, & Wissow, 2007; Hickie, Fogarty, Davenport, Luscombe, & Burns, 2007; Hilty, Yellowlees, Sonik, Derlet, & Hendren, 2009). PCPs tend to be the first medical professionals asked by youth and families to manage their behavioral problems (Evers-Szostak, 2000). PCPs are in a unique position to identify and manage paediatric patients with mental health disorders for various reasons, including: acting as resources and advocates for patients and their families (Oandasan, Malik, Waters, & Lambert-Lanning, 2004; Windrim, 2003); the lack of stigma associated with being treated by a PCP (Sarvet, Gold, & Straus, 2011); the trusted relationship patients have with a PCP (Foy, 2010; Hafting & Garløv, 2007; Sarvet et al., 2011); and opportunities to detect early parent-child problems (Fisman, Sangster, Steele, Stewart, & Rae-Grant, 1996) and to prevent future mental health problems (Hagan, Shaw, & Duncan, 2008).

Individuals in rural/remote areas are found to have higher rates of mental health disorders than those living in urban settings (Ellis & Philip, 2010). Paediatric patients with mental health problems face more challenges in rural/remote areas. Access to specialized mental health care is associated with a number of unique barriers in rural/remote regions (Starr, Campbell, & Herrick, 2002), including: geographic isolation (Cassidy, 2011; Pignatiello et al., 2011); professional isolation (Pignatiello et al., 2011); lack of adequate numbers of appropriately trained and educated mental health care providers (Gamm, Stone, & Pittman, 2010; Cassidy, 2011); a shortage of child psychiatrists in rural areas (Steele & Wolfe, 1999); ongoing stigma surrounding mental health issues (Gamm et al., 2010); and costs associated with travel and time off work (Pignatiello et al., 2011).

Due to the unique struggles of rural and under-serviced areas, PCPs are essential in assessing and treating children and adolescents. PCPs' role in children's health care is more stable in rural communities (Phillips, Bazemore, Dodoo, Shipman, & Green, 2006) and they coordinate care more frequently than in other locations (2006).

Despite the important role of PCPs, especially in rural/remote regions, several studies have found that PCPs tend to under-diagnose and under-treat adolescents suffering from mental health problems (Hickie et al., 2007; Simonian, 2006). Since mental health problems are under-identified, the referrals to mental health providers are reduced (Warfield & Gulley, 2006). In addition, few children referred by PCPs attend specialty evaluations, making the need for PCPs to be involved in the assessment and management more important (Rushton, Bruckman, & Kelleher, 2002). PCPs can improve the lives of children with mental health problems by routinely screening for mental health problems, recognizing symptoms early, and offering first-line treatment (Hagan et al., 2008). The Collège des médecins du Québec recommends that family physicians be able to

diagnose, provide appropriate treatment, refer to specialized services when necessary, and provide follow-up care (1999).

Despite the PCP's role in the assessment and management of paediatric patients with mental health problems, it has been repeatedly reported that a minority of PCPs have received adequate formal training (Fallucco, Hanson, & Glowinski, 2010; Fremont, Nastasi, & Newman, 2008; Steele et al., 2003; Steele, Lochrie, & Roberts, 2010). In a Canadian study, community based physicians at a national family medicine conference were surveyed and most physicians reported minimal undergraduate training (Cawthorpe, 2005). Steele and Dickie (1997) surveyed Canadian child and adolescent medicine residency programs and found there was minimal teaching of child psychiatry. In a cross-sectional cohort study of family physicians living in rural/remote areas of southwestern Ontario surveyed, the majority (84.3%) of respondents felt they needed more training in child and adolescent psychiatry. They suggested: 1) continuing medical education (CME) in the community; 2) small group teaching by a child psychiatrist; and, 3) self-instructional packages. In terms of training importance, family physicians ranked the following topics in child psychiatry as the most important: behaviour disorders; attention deficit with hyperactivity disorder (ADHD); problem adolescents; and, interviewing skills (Steele et al., 2003). PCPs surveyed in other studies have expressed a desire for better training in adolescent mental health (American Academy of Pediatrics (AAP), 2005; Kutner et al., 2008; Tylee, Haller, Graham, Churchill, & Sancu, 2007).

Training has been proposed as one approach to improve PCPs identification of paediatric mental health problems (Haller, Sancu, Sawyer, & Patton, 2009; Sancu et al., 2000). There have been a few studies which have demonstrated that educating PCPs can change physician knowledge and behaviour (Fordis et al., 2005; Power et al., 2007). A few studies in which paediatricians have been trained in mental health communication techniques have shown improvement in symptoms among parents of children with mental health problems (Wissow et al., 2008; 2011). CME can be seen as an important step toward improving the PCPs' ability to identify mental health problems (Steele, Lochrie, et al., 2010).

A national collaborative group known as Physician Training in Child and Adolescent Psychiatry (PT-CAP) has been established to further investigate rural/remote PCP mental health training. It includes all Canadian provinces and the North including Nunavut, Yukon, and Northwest Territories. For this particular paper, the objectives were to determine:

- 1) when PCPs refer to child and adolescent mental health services;
- 2) needs for further training in child/adolescent mental health; and,
- 3) interest levels in further training.

Table 1. The Society of Rural Physicians of Canada definition of rural and/or remote

<p>The Society of Rural Physicians of Canada defines rural and/or remote by the following criteria:</p> <ol style="list-style-type: none"> 1. The MIDDLE digit of the FIRST 3 digits in the postal code is "0". "0" is defined as rural. (Canada Post's definition of rural). 2. Postal codes in census agglomerations of 10,000 or less (defined by Statistics Canada). 3. Postal codes where it is more than one hour to a tertiary care centre. 4. All territories are defined as remote. 5. Medically rural is defined with postal codes in areas near to the borderline of distance to a tertiary care centre where the local hospitals provide a broader range of medical services (i.e. surgery, obstetrics, etc.). <p>(Lee Teperman, Administrative Officer, Society of Rural Physicians of Canada 2008).</p>
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Methods

A cross-sectional cohort of PCPs located in rural/remote areas across Canada was surveyed. For analysis purposes, regions were categorized as follows: Western (British Columbia and Alberta); Central (Saskatchewan and Manitoba); Ontario (southwestern Ontario and Ottawa area); Atlantic (Newfoundland and Labrador, New Brunswick, Prince Edward Island, and Nova Scotia); and, Northern (Northwest Territories, Yukon, Nunavut, and Nunavik-Quebec).

Rural Remote Definition

From a mental health care perspective there appears to be no one definition for "rural/remote" that would be consistent across Canada. Given the lack of nation-wide definitions of "rural/remote" locations, participant contact information was gathered through listings from the Society of Rural Physicians of Canada (SRPC), as their definition applied to all of Canada (Table 1).

SRPC provided the physician lists for each site. SRPC is able to select from their database physicians who are family physicians, general practitioners, and paediatricians, but it was not possible to select the physicians who are practicing child and adolescent mental health. Information about the physicians' patient population can change intermittently, and billing data is the only source of obtaining this information reliably. SRPC updates their database once a year using MD Select and the provincial Colleges of Physicians registrars. In addition, SRPC relies on physicians contacting them as it is not mandatory for physicians to notify SRPC of changes in their practice, whether it is due to a change in patient practice, practice location, retirement, etc. (L. Teperman, Administrative Officer, SRPC, personal communication December 12, 2011).

Due to this restriction, physician practices not officially listed as working in child and adolescent mental health were included in all the mail outs. There was no master list for this study; hence follow-up telephone calls could not be done for physicians who did not respond to the study's invitation.

The questionnaire, developed by the investigators, was divided into four parts: demographic information; training and qualifications; referral patterns; and, identification of professional development needs and interests. It was available in hard-copy (English or French) or (English) (Appendix A) online http://www.cacap-acpea.org/uploads/documents/Referral_Patterns_App_A_2012_05.pdf. A pre-addressed postage paid envelope was provided for physicians choosing to complete the paper survey. If the physicians chose not to answer a question they had a choice to indicate "not applicable" or "I prefer not to answer". The questionnaire was created as an exploratory instrument for the purpose of this study and is unique in the physician training literature. The questions were designed to be independent and address different themes or topics. The analyses were conducted utilizing individual questions without composite scales, eliminating issues of internal validity. External validity could not be established given the uniqueness of the questionnaire. The questionnaire appears to have good face validity. Given the exploratory nature of the study, it was not possible to examine its reliability.

All sites received approval or acknowledgement from their respective research ethics boards to conduct the study. Each site was responsible for mailing correspondence to rural/remote physicians in their area. To maximize response rate the Dillman procedure (Dillman, 2000) was utilized, which consisted of five mail-outs having seven working day intervals: mail-out 1, the introductory letter; mail-out 2 included a cover letter, letter of information, paper survey, and a pre-addressed postage paid envelope; mail-out 3, a reminder letter about the study; mail-out 4 included a cover letter, letter of information, paper survey and a pre-addressed postage paid envelope; and, mail-out 5, the last reminder letter.

Data for each region was analyzed separately. Initially, descriptive statistics were used to examine referral patterns, needs, and training preferences to help guide inferential analyses. Chi-square analyses were conducted to examine significant differences between responses within relevant questions. Conventions for Chi-square analyses require a minimal sample size of ten, and this convention was met for all analyses.

Results

Response Rates

The average participant response across the provinces was 24.9%, with 91.3% of these physicians choosing to complete the paper survey. For details regarding the response

rates please refer to Table 2. Of those who do work with children/adolescents, the majority across regions reported they treat children/adolescents with mental health issues: Western (92.9%); Central (88.9%); Ontario (94.5%); Atlantic (86.9%); and, Northern (100%).

Physician Demographics

Across regions the majority of physicians indicated they are male family physicians, with the exception of the Northern Region where the majority of physicians was female, and in the Atlantic Region, Nova Scotia which was split evenly for physician gender. Physician age range was mainly between 41 to 60 years. Number of years in practice seemed to be distributed across all ranges. The majority of physicians indicated the main community they practice in is between 1,000 to 10,000 population followed by 10,001 to 25,000 population. Some physicians indicated the main community they practice in was greater than 100,000 (Table 3).

Across regions, the majority of physicians indicated their first place of training for a medical degree was in Canada, with the exception of Manitoba in the Central Region. In the Western and Central Regions, for those who obtained a medical degree outside of Canada, South Africa was the most commonly reported place of training (Table 4).

Understanding Physician Referral Patterns

There were some significant differences regarding the referral choices of PCPs. Across regions, with the exception of Northern regions, PCPs were likely to refer to mental health programs. Although less frequent in their referrals relative to mental health programs, PCPs in the Central, Atlantic and Northern regions were more likely to refer to paediatricians and psychiatrists compared to the Western and Ontario regions.

With the exception of PCPs in the Northern regions, excessive length of wait times was rated as a very important reason for not referring. PCPs in Western, Central, and Northern regions also rated excessive distance as a very important reason, as did Ontario and Atlantic regions, although to a lesser extent. Generally, most PCPs rated the following reasons for not referring as unimportant: uncertainty of how to refer; confidence in ability to treat patients; having other professionals come to the office and see patients; uncertainty regarding the severity of the case; and, patient's or parents' refusal to see a psychiatrist.

All regions rated the most important reasons for referring as obtaining recommendations regarding medications and assessing a patient who is non-responsive to medications prescribed. Obtaining a second opinion was rated as a very important reason for referring across regions, with the exception of the Northern region. Obtaining non-pharmacological treatment was rated as somewhat to very important, with the exception of the Central region which rated it as very important.

Table 2. Sample size and response rates for Western Region, Central Region, Ontario Region, Atlantic Region and Northern Region

REGIONS	Sample size ¹	Total sample size	# of surveys completed	Total # of surveys completed	Response rate	% of paper surveys completed ²
WESTERN REGION						
British Columbia	464	1,135	123	247	21.76%	95.9%
Alberta	671		124			92.7%
CENTRAL REGION						
Saskatchewan	173	636	48	155	24.37%	100%
Manitoba	463		107			94.4%
ONTARIO REGION						
Southwestern Ontario	425	628	128	191	30.41%	93.8%
Ottawa Area Ontario	203		63			96.8%
ATLANTIC REGION						
Newfoundland and Labrador	358	870	66	215	24.71%	98.5%
New Brunswick	124		44			97.7%
Prince Edward Island	20		9			100%
Nova Scotia	368		96			99.0%
NORTHERN REGION						
Northwest Territories, Yukon, Nunavut	108	140	18	39	27.86%	88.9%
Nunavik Quebec	32		21			100%
Overall response rate and overall percentage of hard-copy surveys completed		3,409		847	24.85%	91.3%
¹ Physicians who were no longer at the given address (e.g., retired, moved, deceased) or who do not work with children/adolescents were excluded from the study (sample size).						
² Physicians had a choice to complete the survey online (English), or complete the survey by hard-copy (English or French) and mail the survey to the Principal Site. An addressed postage-paid envelope was provided.						

Type of Presenting Problems Associated with Referrals

PCPs were asked to rate the frequency of their referral for various presenting problems as “often”, “sometimes”, or “rarely”. PCPs across regions most often referred for psychosis and suicidality, with the exception of the Northern region. All regions often referred for developmental disorders, self-harm, patient violence/abuse, and physical/sexual abuse. The frequency pattern of referrals was less consistent for other presenting problems. For eating disorders, PCPs in the Central region referred most often, the Western region sometimes to often, and Ontario, Atlantic and Northern regions much less often. Similarly referrals for behavioural difficulties were most frequent for the Central region, less so in the Atlantic region, and least in Western, Ontario and Northern regions. For attention problems and/or hyperactivity, PCPs in the Western, Central, and Atlantic regions refer most often, in contrast to Ontario and the Northern regions. PCPs rarely refer for mood and anxiety, with the exception of the Western region sometimes referring for

anxiety and the Western and Northern regions sometimes referring for mood.

Confidence in Abilities Associated with Child/Adolescent Mental Health

PCPs reported they were somewhat confident in their abilities to make appropriate referrals to psychiatrists and mental health programs, and those in the Atlantic and Northern regions reported their abilities ranged from somewhat confident to very confident. PCPs were less confident in their knowledge for managing mental health problems, all reporting mid-range levels of confidence with the exception of those in the Atlantic region, who reported they were somewhat confident. Across regions this same mid-range level of confidence was reported regarding their patients’ needs being met in a timely manner. Finally, the lowest rates of confidence were present for physicians’ skills in managing mental health problems, with Western, Central, and Ontario regions reporting themselves as somewhat lacking, and the Atlantic and Northern regions reporting themselves at a mid-range of confidence.

Table 3. Characteristics of physicians presented in frequencies

REGIONS	Response					
	Type of physician #	Gender #	Physician age # (age range)	Years in practice #	Population of main community practice in #	
WESTERN REGION						
British Columbia (n=123)	91 (FP)	75 (male)	4 (25-30yrs)	10 (0-5yrs)	4 (<1,000)	
	27 (GP)	48 (female)	25 (31-40yrs)	17 (6-10yrs)	57 (1,000-10,000)	
	5 (PED)		43 (41-50yrs)	18 (11-15yrs)	48 (10,001-25,000)	
			40 (51-60yrs)	19 (16-20yrs)	12 (25,001-100,000)	
			7 (61-65yrs)	20 (21-25yrs)	2 (100,001-250,000)	
			4 (66+yrs)	20 (26-30yrs)	0 (>250,000)	
				11 (31-35yrs)		
				8 (>35yrs)		
	Alberta (n=124)	99 (FP)	82 (male)	10 (25-30yrs)	15 (0-5yrs)	4 (<1,000)
		24 (GP)	40 (female)	24 (31-40yrs)	13 (6-10yrs)	84 (1,000-10,000)
	1 (PED)		35 (41-50yrs)	19 (11-15yrs)	30 (10,001-25,000)	
			38 (51-60yrs)	21 (16-20yrs)	2 (25,001-100,000)	
			11 (61-65yrs)	15 (21-25yrs)	2 (100,001-250,000)	
			6 (66+yrs)	18 (26-30yrs)	2 (>250,000)	
				13 (31-35yrs)		
				10 (>35yrs)		
CENTRAL REGION						
Saskatchewan (n=48)	35 (FP)	38 (male)	0 (25-30yrs)	2 (0-5yrs)	2 (<1,000)	
	13 (GP)	10 (female)	8 (31-40yrs)	6 (6-10yrs)	39 (1,000-10,000)	
	0 (PED)		12 (41-50yrs)	7 (11-15yrs)	7 (10,001-25,000)	
			14 (51-60yrs)	4 (16-20yrs)	0 (25,001-100,000)	
			10 (61-65yrs)	7 (21-25yrs)	0 (100,001-250,000)	
			4 (66+yrs)	5 (26-30yrs)	0 (>250,000)	
			4 (31-35yrs)			
			13 (>35yrs)			
Manitoba (n=107)	90 (FP)	71 (male)	4 (25-30yrs)	13 (0-5yrs)	8 (<1,000)	
	16 (GP)	36 (female)	21 (31-40yrs)	9 (6-10yrs)	53 (1,000-10,000)	
	1 (PED)		37 (41-50yrs)	15 (11-15yrs)	28 (10,001-25,000)	
			26 (51-60yrs)	13 (16-20yrs)	16 (25,001-100,000)	
			8 (61-65yrs)	17 (21-25yrs)	1 (100,001-250,000)	
			11 (66+yrs)	18 (26-30yrs)	1 (>250,000)	
				10 (31-35yrs)		
			12 (>35yrs)			
ONTARIO REGION						
Southwestern Ontario (n=128)	96 (FP)	89 (male)	2 (25-30yrs)	6 (0-5yrs)	8 (<1,000)	
	24 (GP)	39 (female)	12 (31-40yrs)	7 (6-10yrs)	73 (1,000-10,000)	
	8 (PED)		33 (41-50yrs)	16 (11-15yrs)	32 (10,001-25,000)	
			45 (51-60yrs)	15 (16-20yrs)	13 (25,001-100,000)	
			21 (61-65yrs)	16 (21-25yrs)	1 (100,001-250,000)	
			15 (66+yrs)	28 (26-30yrs)	1 (>250,000)	
			20 (31-35yrs)			
			20 (>35yrs)			

Table 3. continued

REGIONS	Type of physician #	Gender #	Response		
			Physician age # (age range)	Years in practice #	Population of main community practice in #
ONTARIO REGION					
Ottawa Area Ontario (n=63)	58 (FP)	34 (male)	1 (25-30yrs)	9 (0-5yrs)	5 (<1,000)
	5 (GP)	28 (female)	12 (31-40yrs)	3 (6-10yrs)	44 (1,000-10,000)
	0 (PED)		26 (41-50yrs)	7 (11-15yrs)	11 (10,001-25,000)
			15 (51-60yrs)	13 (16-20yrs)	2 (25,001-100,000)
			7 (61-65yrs)	9 (21-25yrs)	0 (100,001-250,000)
			2 (66+yrs)	9 (26-30yrs)	1 (>250,000)
				6 (31-35yrs)	
			7 (>35yrs)		
ATLANTIC REGION					
Newfoundland and Labrador (n=66)	40 (FP)	42 (male)	1 (25-30yrs)	6 (0-5yrs)	2 (<1,000)
	21 (GP)	24 (female)	20 (31-40yrs)	7 (6-10yrs)	40 (1,000-10,000)
	5 (PED)		16 (41-50yrs)	13 (11-15yrs)	19 (10,001-25,000)
			15 (51-60yrs)	6 (16-20yrs)	2 (25,001-100,000)
			13 (61-65yrs)	9 (21-25yrs)	3 (100,001-250,000)
			1 (66+yrs)	11 (26-30yrs)	0 (>250,000)
			10 (31-35yrs)		
			4 (>35yrs)		
New Brunswick (n=44)	29 (FP)	26 (male)	1 (25-30yrs)	4 (0-5yrs)	2 (<1,000)
	14 (GP)	18 (female)	4 (31-40yrs)	4 (6-10yrs)	25 (1,000-10,000)
	1 (PED)		13 (41-50yrs)	4 (11-15yrs)	12 (10,001-25,000)
			18 (51-60yrs)	6 (16-20yrs)	5 (25,001-100,000)
			4 (61-65yrs)	4 (21-25yrs)	0 (100,001-250,000)
			4 (66+yrs)	9 (26-30yrs)	0 (>250,000)
			8 (31-35yrs)		
			5 (>35yrs)		
Prince Edward Island (n=9)	5 (FP)	6 (male)	0 (25-30yrs)	0 (0-5yrs)	2 (<1,000)
	3 (GP)	3 (female)	0 (31-40yrs)	0 (6-10yrs)	4 (1,000-10,000)
	1 (PED)		3 (41-50yrs)	2 (11-15yrs)	2 (10,001-25,000)
			6 (51-60yrs)	1 (16-20yrs)	1 (25,001-100,000)
			0 (61-65yrs)	4 (21-25yrs)	0 (100,001-250,000)
			0 (66+yrs)	1 (26-30yrs)	0 (>250,000)
			1 (31-35yrs)		
			0 (>35yrs)		
Nova Scotia (n=96)	66 (FP)	48 (male)	3 (25-30yrs)	9 (0-5yrs)	9 (<1,000)
	25 (GP)	48 (female)	15 (31-40yrs)	5 (6-10yrs)	57 (1,000-10,000)
	5 (PED)		36 (41-50yrs)	16 (11-15yrs)	23 (10,001-25,000)
			28 (51-60yrs)	19 (16-20yrs)	7 (25,001-100,000)
			7 (61-65yrs)	16 (21-25yrs)	0 (100,001-250,000)
			7 (66+yrs)	14 (26-30yrs)	0 (>250,000)
				6 (31-35yrs)	
			11 (>35yrs)		

Table 3. continued

REGIONS	Response				
	Type of physician #	Gender #	Physician age # (age range)	Years in practice #	Population of main community practice in #
NORTHERN REGION					
Northwest Territories, Yukon, Nunavut (n=18)	15 (FP)	5 (male)	1 (25-30yrs)	4 (0-5yrs)	1 (<1,000)
	2 (GP)	13 (female)	3 (31-40yrs)	2 (6-10yrs)	4 (1,000-10,000)
	1 (PED)		6 (41-50yrs)	1 (11-15yrs)	9 (10,001-25,000)
			7 (51-60yrs)	2 (16-20yrs)	3 (25,001-100,000)
			1 (61-65yrs)	3 (21-25yrs)	1 (100,001-250,000)
			0 (66+yrs)	2 (26-30yrs)	0 (>250,000)
				3 (31-35yrs)	
Nunavik Quebec (n=21)	14 (FP)	4 (male)	7 (25-30yrs)	10 (0-5yrs)	0 (<1,000)
	7 (GP)	17 (female)	8 (31-40yrs)	3 (6-10yrs)	17 (1,000-10,000)
	0 (PED)		5 (41-50yrs)	2 (11-15yrs)	0 (10,001-25,000)
			0 (51-60yrs)	5 (16-20yrs)	2 (25,001-100,000)
			0 (61-65yrs)	0 (21-25yrs)	0 (100,001-250,000)
			1 (66+yrs)	0 (26-30yrs)	1 (>250,000)
				0 (31-35yrs)	
			1 (>35yrs)		

FP = family physician; GP = general practitioner; PED = paediatrician

Needs, Opportunities, and Interests in Further Child/Adolescent Psychiatry Training

PCPs in Western, Ontario, and Atlantic regions reported their need for further child/adolescent psychiatry professional development is moderate to somewhat high relative to other areas of medicine. In contrast PCPs in the Central region rated their need in the moderate range, whereas PCPs in the Northern region were divided, rating their need from somewhat minimal to somewhat high.

Regardless of their rating of needs, overwhelmingly across regions PCPs reported they: do not have opportunities for professional development in child/adolescent psychiatry; would be willing to participate in further training; and, would take advantage of funding if it is available.

Choice of Topic and Method of Professional Development

With the exception of the Northern region, PCPs across regions generally chose attention problems and/or hyperactivity as their major topic of interest for further professional development. In the Western region, mood was chosen as an equal priority, whereas in Ontario it was a secondary priority. Suicidality and behavioural difficulties were also identified as priorities in Western and Ontario regions, although they were identified as lower priorities relative to

attention problems and/or hyperactivity, and mood. In the Northern region, there were no significant differences between rankings of priority of topics.

With the exception of the Central and Northern regions, PCPs across regions generally rated CME presented in their community as their preferred method of professional development. In the Ontario region, small group teaching (either by a child/adolescent psychiatrist or paired with a family physician) was chosen as an equal preference, whereas in the Atlantic region it was chosen as a secondary preference along with a one-day conference. In the Central and Northern regions, there were no significant differences between rankings of preference of method.

Discussion

Physician Characteristics

Some physicians have indicated that their main practice locations are in communities larger than 10,000 people. This may be due to physicians moving to larger communities without SRPC's awareness, or they commute to rural areas for patients while maintaining a primary practice in larger communities.

Table 4. First place in training for a medical degree presented in frequencies

REGIONS	First place where physicians obtained their medical degree ¹		
	In Canada	Outside of Canada	Examples of places outside of Canada Place (frequency in descending order)
WESTERN REGION			
British Columbia (n=123)	84	38	South Africa (21), United Kingdom (8), Australia (2), United States of America (2), Germany (1), New Zealand (1), Pakistan (1), Russia (1), Scotland (1).
Alberta (n=124)	68	51	South Africa (29), United Kingdom (6), Nigeria (3), Australia (1), Ireland (2), Netherlands (2), Egypt (1), Guatemala (1), Pakistan (1), Romania (1), Scotland (1), Tranzvania (1), United States of America (1), Zaimbabwe (1).
CENTRAL REGION			
Saskatchewan (n=48)	22	26	South Africa (20), Scotland (2), Burma (1), Ireland (1), Myanmar (1), Sudan (1).
Manitoba (n=107)	44	56	South Africa (25), United Kingdom (6), Scotland (4), Egypt (3), India (2), Iran (3), Ireland (2), Libya (2), Sri Lanka (2), Australia (1), Bangladesh (1), Belgium (1), Iraq (1), Pakistan (1), Romania (1), United States of America (1).
ONTARIO REGION			
Southwestern Ontario (n=128)	113	15	United Kingdom (5), Ireland (3), New Zealand (3), China (1), Germany (1), Iran (1), Scotland (1).
Ottawa Area Ontario (n=63)	55	7	South Africa (2), England (1), Grenada (1), Ireland (1), Poland (1), United States of America (1).
ATLANTIC REGION			
Newfoundland & Labrador (n=66)	41	25	Iraq (5), India (4), Egypt (2), Hungary (1), Libya (2), Nigeria (2), United Kingdom (2), Bulgaria (1), Columbia (1), Malaysia (1), Pakistan (1), Philippines (1), South Africa (1), Zimbabwe (1).
New Brunswick (n=44)	44	4	United Kingdom (2), Czechoslovakia (1), Scotland (1).
Prince Edward Island (n=9)	8	1	South Africa (1).
Nova Scotia (n=96)	68	23	South Africa (4), Brazil (2), Pakistan (2), United Kingdom (2), United States of America (2), Australia (1), Barbados (1), Cuba (1), India (1), Ireland (1), Iraq (1), Mexico (1), Armenia (1), Sri Lanka (1), Taiwan (1), USSR (1).
NORTHERN REGION			
Northwest Territories, Yukon, Nunavut (n=18)	11	7	South Africa (2), China (1), Germany (1), India (1), Ireland (1), United Kingdom (1).
Nunavik Quebec (n=21)	21	0	Not Applicable.

1. "I prefer not to answer" are not included in the frequencies.

Referral Patterns

Referral patterns by PCPs showed a preference towards mental health programs and to a lesser extent to paediatricians and psychiatrists. The Northern regions stand out by showing generally moderate rates of referral. These referral patterns are likely associated with barriers to making referrals to specialists, rather than a lack of need for services (Owens et al., 2002). Another possibility may be due to provincial differences in accessing psychiatrists. For example, in Ontario PCPs in rural areas access telepsychiatry through their children's mental health agency and in Nunavik Quebec referrals to youth mental health may come from social services or families themselves. (Personal communication

with M. Steele, Principal Project Investigator, December 30, 2011; and L. Nadeau, Investigator, Quebec Site, January 15, 2012). Maheux et al. (Maheux, Gilbert, Haley, & Frappier, 2006) suggested that lack of access to mental health services, specifically to child psychiatrists, could explain lack of physician referrals. Rushton et al. (2002) found that only 61% of mental health referrals made from PCPs were completed. Consistent with this literature, PCPs identified practical considerations as the most significant reasons for their lack of referrals, and provided mid-range confidence ratings regarding their patients' needs being met in a timely fashion. Excessive wait times and excessive distance were major reasons for not referring. Differences were seen

between regions, likely linked to greater geographic accessibility due to relatively larger population density (in Ontario) and smaller geographic space (in Atlantic region). Previous studies have identified PCPs' referrals in Ontario as most commonly associated with diagnoses of psychotic disorders, or symptoms related to suicidality, and self-harm (Steele, Shapiro, et al., 2010). They were least commonly associated with learning disorders, ADHD, and behavioural problems. The current study was relatively consistent with this research across regions, identifying PCPs as most often referring for psychosis and suicidality. With the exception of the Northern region, they also commonly referred for developmental disorders, self-harm, patient being violent/abusive and physical/sexual abuse. PCPs in most regions rarely referred for mood and anxiety, whereas the pattern of referrals for other difficulties varied by region.

Despite their struggles in making referrals, when PCPs do refer to psychiatrists the most universal and highly rated reason for referral is to obtain recommendations regarding medications and assess patients non-responsive to prescribed medications. With the exception of the Northern region, obtaining a second opinion was also rated as a highly important reason for referring. These results correspond to physician confidence in the area of child/adolescent mental health. PCPs reported their highest levels of confidence being in their abilities to make appropriate referrals. They reported mid-level range of confidence in their knowledge for managing mental health problems and even lower in their skills in managing such difficulties. This is consistent with the literature which suggests that most PCPs have minimal training in child psychiatry and lack confidence in their knowledge and skills in managing children/adolescent mental health problems (Steele et al., 2003). In fact PCPs, who ultimately do prescribe the majority of psychotropic medications for children, report disconcerting degrees of discomfort with the diagnosis and treatment of children's psychiatric disorders (Fremont et al., 2008). As such, the most important reasons for physician referrals are lack of knowledge and resources (Williams, Klinepeter, Palmes, Pulley, & Foy, 2004). Moving beyond PCPs' perceptions, identification studies suggest that inadequate recognition is still the norm in most practices despite the fact that PCPs are diagnosing more mental health problems than in the past (Lavigne et al., 1993). Interestingly, the results of the present study suggest that PCPs recognize their struggles in the area of mental health practice. While PCPs still rated obtaining non-pharmacological treatment as a somewhat to very important reason for referring, it was not rated as important as the other reasons. This may be due to the fact that, as noted above, PCPs make their own referrals to mental health programs for non-pharmacological treatment, or that they also collaborate with professionals servicing the children in schools or community organizations and/or with private psychologists.

A pattern appears to be emerging in the current study which is generally consistent with the literature. PCPs appear to want access to psychiatric and other mental health referrals, but have serious concerns regarding accessibility (timeliness and distance) and whether the needs of patients will be met. As such, they attempt to manage mental health patients in their practices, despite their lack of confidence in their knowledge and skills in mental health care.

Needs and Interests for Further Training in Child and Adolescent Mental Health

In the current study across most regions, PCPs identified further professional development in child/adolescent psychiatry is at least a moderate need if not higher, with the exception of the Northern region where opinions were more mixed. Regardless of their rating of needs, overwhelmingly across regions PCPs reported they do not have opportunities for training in child/adolescent psychiatry, and they would like to participate in further training and would take advantage of funding. As such, while PCPs may choose to assess and manage psychiatric problems or they may choose to guide the family toward appropriate referral sources (Foy, 2010), they appear to need and desire further training. It is unknown whether interest in further education is a precursor to or a result of their greater inclination to be involved in treating/managing these conditions (Stein et al., 2008), and it is unclear which has resulted in higher levels of attendance at child mental health lectures/conferences (Stein et al., 2009).

When asked for choice of topics for further professional development, with the exception of the Northern region, PCPs identified attention problems and/or ADHD as their major interest. The Western region identified mood as an equal priority, whereas Ontario identified it as a secondary priority. Both regions identified suicidality and behavioural difficulties as interests, although of lower priority. In the Northern region there was no consensus regarding preferred topic. These results are consistent with the literature, which found ADHD as the most important priority for PCPs in terms of future training (Power, Mautone, Manz, Frye, & Blum, 2008; Steele et al., 2003), although one of the studies found behavioural difficulties as an additional priority (Steele et al., 2003). A comparison of the referral patterns with training needs identified by PCPs suggests certain patterns depending on the various psychiatric problems. PCPs make referrals for ADHD and mood at low rates, but want further training in treating these difficulties, suggesting they are willing to manage these difficulties themselves with further training. Interestingly, Stein et al. (2008) found that 70% of physicians thought paediatricians should treat ADHD, but for other conditions most thought that their responsibility should be to refer. While wanting to learn more about suicidality, likely because of the high-risk nature of such a presentation, they also refer suicidality very frequently. This may indicate they need more training in

immediate intervention in suicidality, but would prefer to refer for follow-up. Finally, PCPs make frequent referrals for psychosis, developmental disorders, self-harm, patient being violent/abusive and physical/sexual abuse. They also do not prioritize them in further training, perhaps suggesting that they do not see themselves as having a role in the treatment of such difficulties.

Most PCPs had very particular preferences in method of teaching. The most universally chosen method across most sites was CME in the community. Ontario PCPs identified small group teaching as an equal preference, whereas PCPs in the Atlantic region identified it as a secondary preference along with one-day conferences. The Central and Northern regions, on the other hand, showed no clear preference for method of training. The primary preference in this study, CME in the community, is consistent with previous research (Steele et al., 2003), and is supported by a systematic review of education models in obstetric emergencies. In their study, Black and Brocklehurst (2003) noted that health services have difficulties in sending all relevant staff to distance learning courses, and that locally run courses are more effective in training greater numbers of staff and are better able to address local issues in a way that a national course cannot. Although it lacks the previously noted advantages, telepsychiatry has been identified as a potentially economical method for rural practitioner training (Hilty, Marks, Urness, Yellowlees, & Nesbitt, 2004). The TeleLink program conducted at the Hospital for Sick Children in Toronto was utilized in such a way, and research conducted on it showed promising results (Pignatiello et al., 2011). Additional research will be necessary to determine which educational methodologies are associated with the best outcomes (AAP, 2009).

Implications

Throughout this study differences were found across the regions, in particular for the Northern region. This speaks of the important influence of the context on the practice of PCPs regarding youth mental health care. Strategies around collaborative care and training modalities need to take these particularities into account. The primary care setting not only provides opportunities for early diagnosis and intervention in child psychiatry (American Academy of Child and Adolescent Psychiatry (AACAP), 2009), but in rural settings PCPs encounter such difficulties and need to be supported in their treatment. Whether providing mental health services alone or collaboratively, PCPs would ideally be part of the team to monitor the child and family's functioning and progress in care, applying chronic care principles (AACAP, 2009; Foy, 2010). Clearly, however, CME is needed. Further training of PCPs in child psychiatry would likely benefit from a curriculum which involves not only didactic teaching, but observation of standardized videos and interactive discussion, as previous studies have found these to be effective in such training (Pignatiello et

al., 2011; Stretch et al., 2009). The lack of confidence PCPs experience likely results from a mixed need for training and professional support.

The SRPC definition of rural/remote was used in this study because this definition applied to all of Canada. As this study progressed it became obvious that one definition may not fit all site locations, as in each province urban/rural populations are uniquely geographically dispersed. In some provinces, the distances (particularly from tertiary care centres, educational opportunities, or universities) created a sense of isolation resulting in "rural impact", regardless of their population. In other provinces, simply being outside of a major city resulted in this same "rural" isolation. As such, an unintended implication of this study is to highlight the need to develop clear principles in defining rural/remote regions, so that these guidelines can assist and promote further research in rural remote child and adolescent mental health.

With respect to our conclusions and recommendations our response rate of 24.9% appears low. However, a low response rate for surveys has always been an issue especially among physicians (James, Ziegenfuss, Tilburt, Harris, & Beebe, 2011; VanGeest, Johnson, & Welch, 2007) and if the size of the respondent group is large, a 24% survey response rate is quite acceptable since it is well-known that physicians are heavily surveyed (L. Buske, Director, Workforce Research, Canadian Medical Association, personal communication, January 4, 2012). VanGeest et al. (2007) suggested physicians do not respond due to their busy schedules, the study lacking value to their practice, and concerns about confidentiality.

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