

Why Psychology? An Investigation of the Training in Psychological Literacy in Nursing, Medicine, Social Work, Counselling Psychology, and Clinical Psychology

Douglas D. Murdoch, Asta Gregory, and Jessica M. Eggleton
Mount Royal University

Psychology is the science of human behavior. Thus, service providers in the area of mental health should have a foundational knowledge of psychological science; but do they? To investigate this question university calendars and websites were systematically reviewed to ascertain how many psychology courses and related training is required by entry level degrees for nursing, social work, medicine, counselling psychology, and clinical psychology. Results clearly show that clinical psychology graduates take more courses in psychology and related training than any other group, followed by counselling psychology. It is possible to graduate without any exposure to psychology or mental health issues in some of the other professions including medicine, yet many people's first choice for many mental health issues is a family physician. The discussion focuses on the significant implications for an increasingly interprofessional field with the emergence of primary care networks and other forms of interprofessional collaboration.

Keywords: psychological literacy, training, mental health services, health care policy

At least 20% of Canadians will have a mental health problem (Health Canada, 2002) at significant cost to the Canadian economy in lost (Stephens & Joubert, 2001) and impaired productivity (Dewa & Lin, 2000) and with many people not receiving treatment (Bijl et al., 2003; Cox, 2014; Drapeau, 2014; Kohn, Saxena, Levav, & Saraceno, 2004; Mojtabai & Olfson, 2006; Roberge, Fournier, Menear, & Duhoux, 2014) Yet public funding for mental health services (Block et al., 2008; Jacobs et al., 2008; Romanow & Marchildon, 2003) as well as private insurance coverage (Ekos, 2011; Hunsley, Lee, & Aubry, 1999; Nunes et al., 2014) remains an issue in Canada, so much so that it has been called a silent crisis (Cohen & Peachey, 2014).

Mental health services are provided by a wide array of individuals, regulated and unregulated; so why should consumers choose a psychologist? Most members of the public do not recognize the differences between psychosocial health service providers (Bray, 2010). In fact, their first choice is usually a physician (Ekos, 2011; Janda, England, Lovejoy, & Drury, 1998), yet physicians often report that they have insufficient time to deal with mental health issues (Horwitz et al., 2007; Takhar, Haslam, Hobbs, & McAuley, 2010) as well as discomfort and lack of confidence (Boulé &

McSherry, 2002; Clarke & Polimeni-Walker, 2004; Gordon, 2012; Hodges, Inch, & Silver, 2001; Lindberg, Vergara, Wild-Wesley, & Gruman, 2006; Menahem, 2009; Takhar et al., 2010; Wilkinson, Dreyfus, Cerreto, & Bokhour, 2012).

It also is questionable whether health care managers and policymakers recognize or value the differences between the disciplines providing mental health services. There have been calls for health care systems to have more duties performed by less qualified (and lower paid) staff and thus blur lines between disciplines (Duckett, 2005; Duckett, 2009). Generic job descriptions such as “mental health therapist”—which list as qualifications “social worker, psychologist, registered nurse, registered psychiatric nurse or occupational therapist” (Alberta Health Services, n.d.) and “behavioural health consultants” who “have a variety of backgrounds including nursing, social work, and psychology” (Calgary Foothills Primary Care Network, 2007) fail to recognize differences in training and expertise. Generic terms like *mental health worker* (e.g. Whyte, 2008) or *psychosocial rehabilitation* (e.g., Bachrach, 1996) also blur the lines in professional journals.

We know that psychological interventions are both effective (Chambless & Ollendick, 2001) and cost-effective (Hunsley, Elliott, & Therrien, 2014; Luborsky et al., 2004; Myhr & Payne, 2006; Patrick, 2005), but other professions are free to use psychological therapies. Everything psychologists do overlaps with at least one other profession. Thus, identifying what is unique about psychology—what is psychology's brand—is an issue that has been identified at the provincial (Murdoch, Johnson, Barva, & Moses, 2009), national (D'Eon, 2012), and international level (Bray, 2010; Brown & Roberts, 2000).

We believe at least three characteristics distinguish psychologists from other health care providers in the mental health field. First and foremost is the ability to think scientifically. The scientific method has been considered a major part of psychology's

This article was published Online First December 8, 2014.

Douglas D. Murdoch, Asta Gregory, and Jessica M. Eggleton, Department of Psychology, Mount Royal University.

This research was supported by a grant from the Clinical Psychology Section of the Canadian Psychological Association. Douglas D. Murdoch is a registered clinical psychologist in the province of Alberta.

Correspondence concerning this article should be addressed to Douglas D. Murdoch, Psychology Department, Mount Royal University, 4825 Mount Royal Gate SW, Calgary, Alberta T3E 6K6 Canada. E-mail: dmurdoch@mtroyal.ca

uniqueness and a prime reason for significant success in academic and applied fields (Bray, 2010; Drapeau, 2014; Drapeau & Hunsley, 2014; Peterson, 2003; Stricker, Widiger, & Weiner, 2003). Psychologists are trained to think scientifically in their approach to the people they assist. Stricker and Trierweiler (1995) noted that the scientific method needed to be brought to bear precisely when there was no established scientific knowledge available for a particular set of circumstances. Psychologists observe and measure, formulate and hypothesize, intervene, collect more information and revise their hypotheses, and repeat until the problem at hand is resolved. As well, the training of psychologists in research methods and scientific procedure make them the most qualified of all the health care professions to design, carry out, and interpret program evaluation efforts.

The second unique characteristic of psychology is the breadth and depth of psychological literacy. Psychology has been identified as a major field of scientific study with strong connections to other fields (Boyack, Klavans, & Börner, 2005; Klavans & Boyack, 2009). Psychological literacy, a specific form of scientific literacy, is an emerging concept that is gaining in popularity (Beins, Landrum, & Posey, 2011). Psychologists are trained first in the entire field of psychology and only second as professionals. This basic training in the biopsychosocial foundations of human functioning defines professional psychology, sets it apart, and provides a “value added” component.

The third characteristic is psychologists’ unique combination of skills and knowledge, which optimally positions them to integrate multiple sources of information to make mental health diagnoses and formulations (Dozois & Firestone, 2010). Furthermore, the validity of psychological testing is strong, compelling, and comparable to medical test validity (Meyer et al., 2001).

We believe that training in the scientific method produces an inherent development of skills in analysis and synthesis that, combined with acquired foundational psychological literacy, enables psychologists to provide a more comprehensive, contextually sensitive, and integrated/holistic understanding of a person than does any other health profession. In the experience of the first author, psychologists usually perform the case integration on multidisciplinary teams because psychologists’ knowledge and skill sets overlap with all the other disciplines. This combination of biopsychosocial literacy and scientific methodology is one of the things that psychology can market. However, to do this, we need to document systematically that we do have more depth and breadth of training in psychology and mental health.

To our knowledge there is no existing systematic study documenting training in foundational psychological knowledge across mental health professions in Canada. This study investigated the minimum mandatory training in psychological knowledge required by professional mental health service providers to complete their university training utilizing publicly available data sources—university calendars, handbooks, and web pages. In particular, we investigated five research questions: “Is there a difference in how many psychology or mental health related credits are required as a condition of entry into the degree programs?”; “Is there a difference in how many psychology or mental health related credits are required by the degree programs in order to graduate?”; “In combination, entry and program requirements, how much coursework in psychology is required to graduate?”; and “How much practical experience have students acquired by the time they graduate?” This question was particularly important because it was essential

to reflect different training models accurately as well as to distinguish classroom learning from practical training. Some programs, particularly in medicine, use hands-on learning in the field (rotations) as a primary focus. The fifth question was: “How many total hours in psychological and/or mental health training are students required to have in order to graduate?”

We focused on bachelors degrees in nursing (BN), and social work (BSW) and the *medicinae doctor* (MD) in medicine as these are the entry level degrees for professional practice in those professions across Canada. In psychology, the entry level degree for independent practice varies from province to province between master’s degrees and doctoral degrees (Canadian Psychological Association, 2013); thus it was important to identify the mandatory training elements in both master’s level and doctoral programs in psychology. Collectively, these are the professions most often identified in the Ekos (2011) survey as consumer choices or that are equated in career advertisements.

Method

Programs

All graduate programs in counselling or clinical psychology and all undergraduate degree programs in nursing, medicine, and social work in universities listed on the Association of Universities Colleges of Canada (AUCC; n.d.) website comprised the data pool for this study. There were 68 nursing (BN)¹, 37 social work (BSW), 18 medical (MD)², 23 master’s of counselling psychology,³ 20 master’s of clinical psychology, six doctoral counselling psychology,⁴ and 24 doctoral clinical psychology programs⁵ analyzed in this study.

Exclusions

Any university not having at least one of these degree programs was excluded from study. Also excluded were nondegree programs such as diplomas, upgrading, or international transfer programs. Several unique programs were found, such as a bachelor of science in mental health (a postdiploma upgrade program for registered psychiatric nurses) and a master’s of marriage and family therapy. These were not included in the analysis as their very uniqueness made statistical comparison impossible. Likewise, bachelor of psychiatric nursing (BPN) programs were not included in the analysis as only three such programs were found in the search. Furthermore, the standards of entry for psychiatric nurses varied across the country; a BPN required in all provinces east of Manitoba, whereas only a diploma in psychiatric nursing was required in Manitoba and all provinces west. Also excluded were postdegree upgrade programs as we wanted to focus on entry level degrees. One counselling doctoral program was excluded as it was impossible to quantify the content of the program.

¹ BN is used generically for Bachelor’s of Nursing; the precise nomenclature varies from program to program.

² This includes degrees in general medicine and family practice.

³ This includes MA, MEd, and MSc.

⁴ This includes PhD and EdD.

⁵ This includes PhD and PsyD.

Procedures

Data collection occurred between December 1, 2012 and May 30, 2013. Using the AUCC (n.d.) website to identify universities for this study, the most currently available calendar for each university was systematically reviewed for training programs for clinical psychology, counselling psychology, general medicine, family medicine, social work, nursing, and psychiatric nursing. Some universities offered multiple streams. Each of these streams was counted as a separate program if the requirements were different. For example, some BN and BSW programs offered a different stream for students who had a bachelor's degree in another discipline and some counselling programs allowed students to choose between thesis based and nonthesis based streams. An initial analysis of MD programs showed no differences in the required training in psychology or mental health between general medicine and family medicine so all were grouped under MD. Universities not offering any of these programs were noted in the database.

If one or more of these programs was offered by the university, a research assistant (RA) reviewed the calendar to determine: (i) how many psychology or mental health credits were required for entry to the training program, (ii) the psychology or mental health courses required for graduation from the program, (iii) the optional psychology or mental health credits available, and (iv) the number of practicum and residency/internship hours in a mental health setting that were required to graduate. When necessary, additional information was obtained from relevant websites of the various programs (e.g., program specific handbooks).

We developed the following operational definition of a psychology course, based on the American Psychological Association (2013) definition of *psychology*: "Courses taught within a Department of Psychology regarding the study of behavior including the methods of studying human behavior."

Our operational definition of a mental health course was:

Courses taught outside of a Department of Psychology regarding the study of behaviour specific to mental health, illness or development. If they closely resemble the course content of a psychology course, but are taught by another department or discipline, count as a mental health course.

This operational definition was based on the definition of mental health used by the World Health Organization (2013).

The operational definition of a practicum was:

A course designed especially for the preparation of student health professionals that involves the supervised practical application of previously studied theory on a part time or short term basis (less than 10 months) that specifies placement in a mental health related setting.

This was based on the Merriam Webster (2012) online dictionary definition of an practicum.

It was deemed important that the placement specify a mental health setting because only 4% of nursing students take a placement in a mental health setting (Hartigan-Rogers, Cobbett, Amirault, & Muise-Davis, 2007). In particular, a field placement that specified a mental health related population, such as addictions, was counted whereas a practicum in a general medical ward would not based on the rationale that in the first instance we knew that mental health related training was occurring whereas in the second

instance we had no way of knowing if training in mental health was occurring. A laboratory portion of a course that provided initial skill training—often in a role play situation with fellow students—did not qualify, as it was judged to be part of the credit course.

The operational definition of an internship that we used was:

A field placement designed especially for the preparation of student health professionals that involves the supervised practical application at an advanced level of previously studied theory and occurs at the end of the training period. It will be at least 10 months of full time work or the equivalent over two years on a part time basis and must specify placement in a mental health related setting.⁶

This definition was developed from the Merriam Webster (2012) definition of an intern.

Admission requirements for psychology graduate programs were often stated in terms of degrees required rather than specific courses or numbers of courses. An examination of Canadian undergraduate programs in psychology indicated that a psychology major typically required between 16 and 18 courses. However, a few programs required as few as 14. Therefore, if a graduate program in psychology indicated that the minimum requirement for admission was a bachelor degree with a psychology major, 14 courses (42 credits) was used as the mandatory psychology credits required for admission because this was all that could be guaranteed. In cases in which an honors degree in psychology was required, the minimum number of courses required in Canadian undergraduate programs in psychology was found to be 18 (54 credits), therefore this was used as the standard number of credits required for entry.

Some clinical psychology doctoral programs had direct entry from undergraduate studies. Others accepted students into the master's program but fast tracked them to the doctoral stream without the need to complete a master's degree. If a clear master's component was present, it was separately coded. If there was no clear and separate master's step, then the doctoral program was analyzed as a single program. In cases where a master's degree was required for entry into a clinical psychology doctoral program, we used the minimum number of courses required for admission into a clinical psychology master's program (14 courses, 42 credits) plus the minimum number of courses required to complete a master's degree in clinical psychology (six courses, 18 credits) to arrive at an entry requirement of 60 credits, the minimum number of credits a student would have accumulated in obtaining a master's level degree. The same was done for counselling psychology where the value of entry credits required was 27. Calendar and/or program information made it clear that most psychology master's programs were considered to be steps in the process of obtaining a doctoral degree. However, we did not presume that all psychology master's graduates went on to complete the doctorate nor that all doctoral students had obtained a master's degree at the same university even though this would usually be the case.

Once the entire list of universities on the AUCC (n.d.) website had been systematically examined, a second RA reviewed all the coding decisions of the first RA ($\kappa = .960, p < .001$). If there was complete agreement, the second RA indicated that the data had

⁶ Residency is used interchangeably with internship in this context.

been verified. Where a discrepancy existed, the second RA posted a note in the relevant cell of the database. The original RA would then respond to the inquiry of the checker. If agreement was reached then the consensus coding was used. If consensus could not be reached, the principle investigator (PI) facilitated a consensus decision.

As it turned out very few programs (3%) required courses fitting the description of a mental health course so these required mental health credits were added to required psychology credits to create a new variable, “entry credits,” which was the total number of psychology and mental health courses required to be considered for the program. To be consistent, we combined mandatory psychology course credits with mandatory mental health credits to create a new variable, “program credits,” the number of credits in psychology and similar courses required while in program to graduate. The number of hours of mandatory field placements, practicum and internship hours in mental health settings was combined to create the variable “practical hours” to reflect the time spent acquiring hands-on clinical experience.

Ethical Considerations

This study relied entirely on publicly available printed written material or on publicly accessible university Internet sites; that is, it is material intended for public consumption. As such, it falls outside the scope of Human Research and Ethics Boards (Canadian Institutes of Health Research, 2010). This research was discussed with the chair of the Human Research and Ethics Board of Mount Royal University (as recommended by the Tri-Council ethical guidelines) who concurred that our study utilized publicly accessible information.

Results

Table 1 summarizes the findings. Results show that it is possible to attend at least one nursing, medical, or social work program in Canada and never take a single course or have a single placement related to mental health issues. As can be seen by the total hours, 50% of all nursing programs and social work programs have fewer than 80 mandated hours dedicated to foundational psychological knowledge or to gaining mental health care experience. Fifty percent of medical schools required less than 275 hr of training in mental health (psychiatry) or psychology. By comparison, 50% of counselling master’s programs required more than 1,000 hr. Clinical psychology master’s programs started at a minimum of 1,000 total hr of training. Counselling psychology doctoral programs started at a minimum of 1,500 hr. Clinical psychology doctoral programs started at over 2,000 total hr and 50% require over 3,000 total hr of training.

Entry credits, program credits, and practical hours were analyzed together in a multivariate analysis of variance because the variables were conceptually independent. The overall multivariate test was statistically significant, $F(18, 188) = 54.98$, $p < .001$. The between-subjects test for type of degree was also highly significant for all three variables: entry credit: $F(6, 190) = 273.72$, $p < .001$; program credits: $F(6, 190) = 70.31$, $p < .001$; practice hours; $F(6, 190) = 375.93$, $p < .001$. Post hoc comparisons on each of these variables were conducted

using a Bonferroni correction for multiple comparisons and significant differences are noted in Table 1 with subscript notation.

To summarize the entry credits variable, nursing, medicine, and social work did not differ from one another and all three require fewer entry credits than do psychology professional programs. Clinical psychology programs required significantly more entry credits than did counselling programs. Clinical psychology master’s programs did not differ from the doctoral level programs in the number of prerequisite credits needed.

Summarizing the program credits, all the psychology curriculums required more program credits than did nursing, medicine, or social work. The course load in program credits was similar between counselling and clinical psychology programs and between the master’s stage and the doctoral stage, with the exception that the clinical doctoral programs had more course work than the counselling doctorate.

Summarizing the practice hours findings, social work requires similar numbers of practice hours as nursing, but fewer mandatory practice hours than medicine or any level of psychology training. Medical programs were on a par with counselling and clinical psychology master’s level programs in practice hours. Counselling psychology doctoral programs had more practical hours than all other programs except clinical psychology doctoral programs, in which students had the most mandatory practical hours of any degree program.

To answer the fourth question regarding how many credits are required to graduate, we combined entry credits with program credits to create a new variable: total credits. This was analyzed by an analysis of variance (ANOVA) separately because it was a combination of two variables from the first analysis. The analyses was significant, $F(6, 190) = 70.3$, $p < .001$. Post hoc analysis with Bonferroni correction for multiple comparisons resulted in the pattern of significant differences noted by subscripts in Table 1.

It appears there are two clusters. Nursing, social work, and medicine programs were on a par with one another and required fewer total credits than any of the psychology programs. The psychology programs tended to be equal in their coursework requirements regardless of the type of psychology or the level of training, with the exception that clinical psychology doctoral programs required more coursework than the counselling doctoral programs.

To answer the fifth question—total hours of instruction and experience combined required to graduate—we multiplied total credits by 13 (assuming a 13-week semester for actual class time, not counting exams) to calculate an estimate of the direct classroom instruction hours that was then added to the practical hours to yield a new variable: total hours. As total hours was a combination of variables used in other analyses, we again used ANOVA with total hours the dependent variable and degree program the independent variable. The results were significant, $F(6, 190) = 568.43$, $p < .001$. Post hoc analysis with a Bonferroni correction for multiple comparisons resulted in the pattern of significant differences shown in Table 1 noted by subscripts. Nursing, medicine, and social work were on a par, and all required significantly fewer total hours than any of the psychology degrees. Within psychology the clinical doctorate had the most hour requirements, followed by the counselling doctorate, the clinical master’s and the

Table 1

Summary of the Credits in Psychological and Mental Health Knowledge, Hours of Practice Experience in Mental Health Settings, and Total Training Hours

Variable	Degree	Min	Med	Max	<i>M</i>	<i>SD</i>
Entry Credits	Nursing	0	0	9	0.40 _a	1.55
	Medicine	0	0	0	0.00 _a	0.00
	Social work	0	0	18	1.46 _a	4.04
	Counselling psychology master's	0	19.5	48	21.75 _b	17.16
	Clinical psychology master's	42	54	60	51.90 _e	5.25
	Counselling psychology doctoral	30	33	33	32.50 _d	1.22
	Clinical psychology doctoral	18	60	60	54.71 _e	10.88
Program Credits	Nursing	0	6	18	4.63 _a	4.27
	Medicine	0	1.5	27	3.64 _a	6.48
	Social work	0	3	18	3.80 _a	4.37
	Counselling psychology master's	15	30	51	32.81 _b	12.39
	Clinical psychology master's	18	30	51	32.45 _b	9.19
	Counselling psychology doctoral	9	16.5	37	20.00 _{b,c}	10.81
	Clinical psychology doctoral	12	27	70	35.17 _{b,c}	19.49
Total Credits	Nursing	0	6	18	5.02 _a	4.21
	Medicine	0	1.5	27	3.64 _a	6.48
	Social work	0	3	22	5.26 _a	6.11
	Counselling psychology master's	15	58.5	96	54.56 _b	24.73
	Clinical psychology master's	66	82.5	105	84.35 _b	11.25
	Counselling psychology doctoral	42	49.5	67	52.50 _{b,c}	9.89
	Clinical psychology doctoral	72	84	120	89.88 _{b,c}	15.82
Practice Hours	Nursing	0	0	200	21.24 _a	47.64
	Medicine	0	240	640	260.00 _b	152.32
	Social work	0	0	280	8.46 _a	46.07
	Counselling psychology master's	0	306	700	342.83 _b	219.56
	Clinical psychology master's	0	300	850	317.30 _b	250.43
	Counselling psychology doctoral	1,000	1,904	2,600	1,944.00 _c	580.96
	Clinical psychology doctoral	800	2,600	3,560	2,534.79 _d	554.12
Total Hours	Nursing	0	78	278	86.53 _a	78.53
	Medicine	0	269	660	304.06 _a	166.40
	Social work	0	39	280	76.80 _a	85.42
	Counselling psychology masters	201	1,093	1,888	1,052.15 _b	439.37
	Clinical psychology masters	1,016	1,321	2,034	1,413.85 _c	302.42
	Counselling psychology doctoral	1,546	2,632	3,306	2,626.50 _d	648.01
	Clinical psychology doctoral	2,087	3,706	4,652	3,703.17 _e	537.97

Note. For each variable we note the minimum (Min) number observed for any program, the median (Med) number of all programs, the maximum (Max) observed in any program as well as the mean and standard deviation. Within each variable, common subscripts are not significant from one another whereas different subscripts are different from one another. All differences were at the $p < .001$ unless noted by the following exceptions. In entry credits the p value for counselling psychology master's in comparison to counselling psychology doctorate was $p = .043$. In the program credits, medicine compared to counselling psychology doctorate was $p = .007$; social work compared to counselling psychology doctorate was $p = .003$; counselling psychology doctorate compared to clinical psychology doctorate was $p = .012$. In total credits counselling doctorate in comparison to nursing, medicine, social work and clinical psychology doctorate were $p = .004$, $p = .007$; $p = .003$ and $p = .012$ respectively. In practical hours, nursing compared to medicine was $p = .008$; social work compared to medicine was $p = .011$. Entry credits = total credits in psychology and mental health courses required for entry to the program; program credits = the total number of credits required within the program to graduate; total credits = entry credits plus program credits; practice hours = the total number of practicum and residency/internship hours in mental health settings required to graduate; total hours = the calculated total of hours needed to spend in courses (entry requirements plus degree courses) and practical settings required to graduate from the program.

counselling master's in that order. These differences are also highlighted in Figure 1, which shows a plot of the total hours by degree, with each dot representing a separate program.

Several findings are clear in Figure 1. One is the tight clustering of nursing, social work, and medicine programs close to 0 hr, with very few approaching 500 hr. Master's of counselling psychology programs had a wide range of expectations from 200 hr to almost 2,000 hr (with the biggest cluster being in the 1,000–1,500 hr range). Clinical psychology master's programs minimum requirements started at the 1,000-hr mark and ranged to just over the

2,000-hr mark, with the biggest cluster around the 1,400-hr mark. The six counselling doctorate programs were quite spread out as well, from just over 1,500 hr to 3,300 hr. There appears to be more variability in the expectations of the counselling psychology departments than the clinical psychology departments at both the master's and doctorate level. One clinical psychology doctoral program required 2,000 hr; the remaining programs ranged from over 3,000 hr to almost 5,000 hr. The majority of clinical psychology doctoral programs required a minimum number of hours that exceeded that of any other degree program in this study.

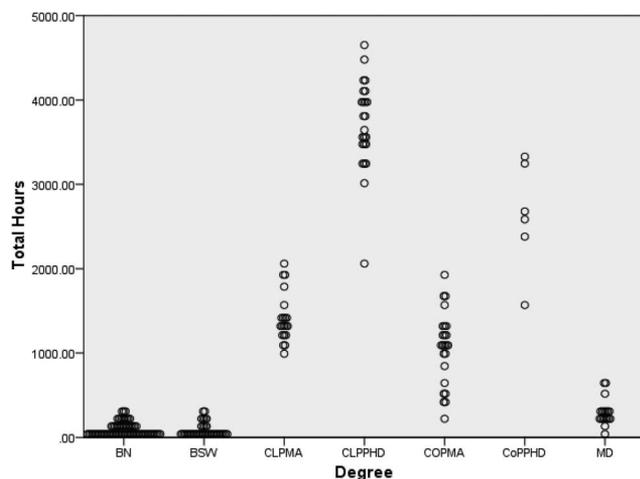


Figure 1. Conservative estimate of the total hours spent in the acquisition of psychological and related mental health knowledge and experience. BN = undergraduate nursing; BSW = undergraduate social work programs; CLPMA = clinical psychological master's level program; CLPPHD = clinical psychology doctoral level programs; COPMA = counselling psychology master's level programs; CoPPHD = counselling psychology doctoral level programs; MD = undergraduate medicine.

Discussion

This study demonstrates there are very significant differences in the acquisition of psychological literacy and mental health experience between nursing, social work, medicine, counselling psychology, and clinical psychology. This has implications for public policy, hiring practices and professional training.

Nursing, medicine, and social work all require fewer entry credits in psychology or mental health courses than professional psychology programs. This is not surprising given that all three are undergraduate programs whereas psychology professional training starts at the graduate level. Within psychology, clinical programs require significantly more entry credits than do counselling programs. Counselling psychology programs are primarily found within faculties of education, and recruit from both education and psychology undergraduates; thus they often cannot require the education students to have the equivalent of a psychology major. Furthermore, some faculty of education graduate programs have the same entrance requirements for all their master's programs, not just counselling degrees; thus they might not require any prior psychology or mental health training. Clinical psychology master's programs did not differ from the doctoral level programs in the number of prerequisite credits needed. However, some doctoral programs are direct entry from undergraduate and therefore have the same entry requirements as the master's programs at other universities.

All the psychology curriculums required more program credits than did nursing, medicine, or social work. The course load in program credits was similar between counselling and clinical psychology programs and between the master's and the doctoral stage, except that clinical doctoral programs had more course work than counselling doctoral programs. This can be explained by the inclusion of direct entry doctoral programs in the clinical group, the course load for which would therefore be the equivalent of both

the master's and the doctorate levels. It is not surprising that total credits (entry plus program) followed the same pattern: social work, nursing, and medicine were all relatively equal but significantly less than any of the psychology programs.

Differences between programs cannot be explained by a preference for "hands-on" training. Social work and nursing required fewer mandatory practice hours in mental health settings than medicine or any level of psychology training. Counselling and clinical psychology master's students were required to get as many practicum hours as medical students, in addition to many more classroom hours. Counselling psychology doctoral programs had more practice hours than all other programs except clinical psychology doctoral programs, which required the most mandatory practice hours of any degree program.

For the total time in training in psychological literacy (total hours), nursing, medicine, and social work were on a par, and all required significantly fewer total hours than any of the psychology degrees. Within psychology, the clinical doctorate required the most total time followed by counselling doctorate clinical master's and counselling master's in that order. Total hours for all programs should be considered conservative estimates because they do not include any out-of-class time, that is, reading, assignments, and learning and practicing new assessment and therapy methods. Most university calendars indicate that students should expect to spend 3 hr of independent study for each hour of classroom instruction, so a three credit course translates on average into a 12 hr per week course. However, because we had no way of knowing how much time students spend outside of the classroom, we maintained the stance of documenting what was the absolute minimum that might be expected of a graduate.

Given these results, it is not surprising that most nurses feel inadequately trained for careers in mental health (Wynaden, Orb, McGowan, & Downie, 2000) and the majority do not intend to pursue such careers (Happell, 2001; Hayes et al., 2006) with only 4% choosing mental health practicum placements (Hartigan-Rogers et al., 2007). The most typical training seems to involve a single, short, hands-on practicum experience with no classroom instruction. These results are probably representative of the training received by most nurses at the undergraduate level in Canada. Nursing degree programs have very full curriculums. Students need to learn a wide array of material and skills at a high level of competence. Because most of the curriculums are set (mostly mandatory courses, with few options), there is little to no room to expand the curriculum; consequently, expanded training in mental health would be at the expense of other high priority courses and training experiences.

Nursing's lack of mental health training is not an issue if the Canadian health care system is moving to interprofessional practice and primary care networks (Health Canada, 2006). Nurses' training in physical medicine and case management will play a vital role within those groups. Mental health issues will not be the primary focus of the majority of nurses on such teams. Issues arise when those responsible for hiring decisions consider an undergraduate nursing degree to be the equivalent of a professional psychology degree for providing primarily mental health services.

The BPN, a degree clearly geared to service in mental health, was excluded from this analysis as there were too few programs to include in a statistical analysis. Qualitatively, BPN curriculums

dedicate significantly more courses and practice experiences to mental health than other nursing programs, about the equivalent of the lower range of a master's degree in psychology. Clearly, these nurses would be more adequately prepared to provide mental health services. However, this training would still not enable them to perform full psychometric assessments and in some jurisdictions they would not be deemed legally able to make a diagnosis. Hence, they cannot be considered the equivalent of a professional degree in psychology. Furthermore, from British Columbia to Manitoba, regulatory bodies only require a diploma in psychiatric nursing, not a bachelor's degree (Murdoch & Eggleton, 2014).

Given this study's focus on mandatory training, we were struck by the degree of variability in BSW curriculums across the country in terms of entrance requirements, program structure, curriculum design, and program delivery. Many programs allow their students considerable latitude in choosing courses and field placements (practicums). Due to this, these findings of minimum requirements will tend to underestimate the actual training in mental health for some social work graduates. On the other hand, given the variability in training requirements, it is possible to obtain a BSW without taking a single course related to mental health. Bland and Renouf (2001) also noted considerable variation in Australian social work students' "basic repertoire of knowledge and skills . . . for practice in mental health settings" (p. 239).

Given these results, it is hard to understand how job descriptions could suggest that nurses, social workers, and psychologists can equally fill the role of a mental health therapist or behavioral health consultant when it is quite possible to obtain an undergraduate nursing or social work degree in Canada with no training in psychology or any related aspect of mental health. Most Canadians' first choice for a care provider for mental health issues is a physician (Ekos, 2011). However, one also can obtain a medical degree in Canada without taking any courses in psychology, psychiatry, or any related aspect of mental health. As in nursing, the most typical training seems to involve a single, short, hands-on practicum experience with no classroom instruction. This practicum typically does not include skill development in counselling or psychotherapy (Borins, Holzapfel, Tudiver, & Bader, 2007). However, in 2013 general/family physicians (GP) in Alberta billed over 60 million dollars for psychotherapy/counselling (Alberta Health, 2013). A recent study in New Brunswick found a majority of physicians treated over half their anxious and depressed patients solely in their practice sometimes using counselling alone and 57% acknowledged providing advice despite having no training in counselling (Talbot, Clark, Yuzda, Charron, & McDonald, 2014). In the United States, it has been noted that psychotherapy for depression by physicians has gone up with a concurrent decline in psychotherapy by psychologists (Barlow, 2004).

These results seem very representative of the training in psychological literacy received by most GPs and family physicians. Attempts to integrate more mental health training into curriculums have met with mixed reactions and success (Morley et al., 2011). Given the current fullness of the curriculums, it is hard to see where a substantive increase in psychological literacy and skills can occur. Hence, it is not surprising physicians express discomfort and a lack of efficacy in dealing with mental health issues in general practice and in the emergency room (Boule & McSherry, 2002; Clarke & Polimeni-Walker, 2004; Gordon, 2012; Hodges et

al., 2001; Lindberg et al., 2006; Menahem, 2009; Takhar et al., 2010; Wilkinson et al., 2012).

With 20% of Canadians having a mental health issue (Health Canada, 2002) and with an average practice size of 1,700 (The College of Family Physicians of Canada, 2010), GPs will typically encounter 340 patients per year with mental health issues. This increases to 85% if you include physical problems that "have a significant psychological and/or behavioral component, such as chronic illnesses" (American Psychological Association, 2014). This makes a strong case for the integration of psychologists into primary care networks; that is professionals with a broad base of psychological knowledge and the skills to aid in the assessment, diagnosis, and treatment of mental disorders and assist with the psychological aspects of physical illness (behavioral medicine).

Counselling psychology programs significantly exceed nursing, social work, and medical programs in the total amount of training in psychological literacy required but provided less than clinical psychology programs. The main difference was in the amount of previous training in psychology required to gain admission to the programs. Counselling psychology is almost always taught within a faculty of education. The candidates come with both psychology and education undergraduate degrees, and there will often be common entry requirements for multiple streams of graduate work. Counselling psychology programs therefore cannot demand as extensive a background in psychology as do clinical psychology programs. Our data probably underestimates the total amount of psychological training the average counselling psychology graduate receives. Many such students will exceed the minimum requirements for undergraduate training; indeed many programs make it clear that more extensive training in undergraduate psychology is an advantage for entry into these highly competitive programs.

Clinical psychology graduates had by far the most coursework in psychological literacy and time spent in mental health placements of the professional training programs examined in this study. This advantage begins with the requirements for admission. All of the clinical psychology programs required at least a psychology major for admission, that is, a minimum of 14 courses in psychology (and more typically 16–20). Most programs (74%) required (or strongly preferred) an honors undergraduate degree or its equivalent in psychology, that is, at least 18 courses (and more typically 20–22) including prior research experience either in the form of an honors thesis or equivalent research experience.

The majority of clinical psychology programs follow the scientist–practitioner model, and thus have an expectation of substantive research theses. This might lead one to expect that there would be a concomitant drop in the number of courses needed to graduate. This however turns out not to be the case—clinical psychology graduate students take as many courses in psychology and mental health as students in other program of study and furthermore, they match or exceed practicum and internship hours.

Psychology graduates are highly trained clinician–scientists who can fulfill many roles within the health care system and in primary care clinics. According to Mash and Hunsley (2007), their expertise in empirically justifiable assessment can be an integral part of decision making along the entire continuum of care, from diagnosis through intervention design to the evaluation of treatment progress and outcomes. These authors emphasized the importance of taking a multimethod, multidimensional, and multi-

source approach that places assessment findings within a developmental, systems, and cultural context; with knowledge of psychopathology and comorbidity, integrating all this information within empirically derived theoretical models. The need to understand assessment in context, and to integrate multiple sources of information in an empirically and theoretically informed manner, has been echoed by others as well (Achenbach, 2006; De Los Reyes, Bunnell, & Beidel, 2013; Smith, 2007). How can this occur if one has not studied normal and abnormal development, has not studied psychopathology and diagnostic systems, has not been trained in the administration and limitations of multiple methods of assessment?

Although we have not reported on the specifics of the training each profession receives, even under optimal conditions, nursing, medicine, and social work programs cannot match the breadth and depth of psychological literacy of the counselling or clinical psychologist. Students in accredited psychology programs must take two courses at the senior undergraduate or graduate level in each of the following areas: biological basis of behavior, cognitive-affective bases of behavior, social bases of behavior, and individual behavior as well as a course on the historical and scientific foundations of psychology (“Quick Guide to 2011 CPA Accreditation Criteria,” 2011). In most jurisdictions, nurses and social workers cannot provide a diagnosis. Furthermore, none of these professions have the training and breadth of knowledge to conduct and interpret a full psychometric assessment.

Physicians may be unaware of these differences. In a National Physician Survey (The College of Family Physicians of Canada, 2013), Canada’s physicians were asked to rate their access to nurses, social workers, physiotherapists, occupational therapists, and dietitians but not psychologists. In an era of interprofessional practice (Gibson, 2009; Health Canada, 2006) professional psychology must have a seat at the table (Rozenky & Janicke, 2012); our expertise in scientific approaches to human behavior can help provide leadership in developing a health care system grounded in empirically supported best procedures (Bray, 2010). All the regulated health professions deliver valuable and needed service. Each of these professions brings areas of expertise outside of psychological literacy to the field of mental health. Each has its place and the benefits of team approaches to mental health are the products of these different skill sets; but each should be offering different services reflective of their training. Interdisciplinary teams work best only when the specific training and expertise of each discipline is recognized and utilized to its fullest. (Chomienne et al., 2011; Grenier, 2010; Jesmin, Thind, & Sarma, 2012).

There are some limitations to this study. The study was funded by the Clinical Psychology Section of the CPA and the PI was a clinical psychologist. To guard against potential bias, all data was double checked by two RAs. We used conservative estimates of the psychology students’ coursework (see Method section). However, we would welcome a replication of this study by another group.

A second limitation is the focus on the minimum standard of each program; what is the least that can be expected from someone presenting themselves with that degree? It will therefore underestimate the training of some students in all the professions and significantly underestimate the training of most professional psychology students. For example, the minimum standards used for clinical psychology likely underestimates by one third the typical

coursework. These minimum standards would preclude entry to some programs and registration in some jurisdictions.⁷ However, in keeping with our stated purpose of looking at the minimum coursework that could be expected for a professional degree, we felt it important to use the most conservative numbers (the combination of the minimums for both the bachelors and the master’s degrees). A useful future study will look at the average training of the graduates in these various programs.

As well, the study focused on Canadian based universities identified through the AUCC. The findings may not apply to someone who trained in another country. As well education is not static and departments make adjustments to their curriculums. However, there would need to be very dramatic shifts for the results to be substantively different.

Finally, it must be cautioned that these results are about programs, not individuals. Prior degrees, independent study, optional courses, and practicum placement choices may enhance the psychological literacy of an individual in any of the professions. Each individual’s qualifications should be assessed on their own merits.

This article takes issue with the perception that health care providers are interchangeable professions all providing more or less the same services from a similar base of training. This blurring of professional responsibilities and training is a disservice to all the professions, misleading to the public, and potentially dangerous if the demands of the service population exceed the skill set and knowledge base of the person occupying the position. Health Canada (2006) has called for “the right mix of health care providers with the right skills in the right place at the right time” (para. 1).

One clear message to psychology is that we cannot lose sight of the importance of training as scientists or the diversity of tasks and roles psychologists perform. A major part of our distinctiveness is our mastery of the science of psychology (Belar, 1998; Drapeau & Hunsley, 2014), and if we lose that distinction we risk being seen as generic mental health providers (Bray, 2010). The scientist-practitioner model of psychology is intensive, time consuming, and costly but so is specialization in any field. We feel that this training model is worthwhile but only if it is seen by managers, policymakers, and the public as a high level of specialization. Although this article has focused on mental health, these same findings can be applied to interventions in behavioral medicine as well (Barlow, 2004; Westheimer, Steinley-Bumgarner, & Brownson, 2008). However, it is not enough to have an advantage (Murdoch, 2013). The public and key decision makers need to be aware of the differences and embrace the value added components brought to mental health care by psychologists.

Perhaps the last word can go to a physician: “Integrating psychologists into primary care makes the system more effective, allows for early recognition and intervention in the pervasive psychosocial nature of health and illness, and will save a ton of money by avoiding needless tests and treatments” (Schерger, 2004, p. xi).

⁷ For example the College of Psychologists of Ontario requires a minimum of 20 undergraduate courses as part of their registration requirements.

Résumé

La psychologie est la science du comportement humain. Ainsi, les fournisseurs de services en santé mentale devraient posséder une connaissance de base en psychologie, mais est-ce le cas ? Pour répondre à cette question, on a examiné avec soin les programmes et les sites Web des universités pour déterminer combien de cours en psychologie ou dans un domaine connexe devaient suivre les nouveaux inscrits en sciences infirmières, en travail social, en médecine et en psychologie du counselling et en psychologie clinique. Les résultats montrent clairement que les diplômés en psychologie doivent suivre plus de cours en psychologie et dans des domaines connexes que tout autre groupe, suivis des étudiants en counselling. Dans certains domaines d'études, il est possible d'obtenir un diplôme sans jamais suivre une formation en psychologie ou en santé mentale, dont la médecine, et pourtant le médecin de famille est la première personne vers laquelle les gens se tournent pour discuter d'un problème de santé mentale. La discussion porte sur les répercussions importantes des connaissances interprofessionnelles, qui doivent s'accroître, en raison de l'émergence des réseaux de soins primaires et d'autres formules de collaboration entre professions.

Mots-clés : connaissances en psychologie, formation, services en santé mentale, politique sur les soins de santé.

References

- Achenbach, T. M. (2006). As others see us: Clinical and research implications of cross-informant correlations for psychopathology. *Current Directions in Psychological Science, 15*, 94–98. <http://dx.doi.org/10.1111/j.0963-7214.2006.00414.x>
- Alberta Health. (2013). *Alberta health care insurance plan statistical supplement* (pp. 1–93). Edmonton, Canada: Author. Retrieved from <http://www.health.alberta.ca/documents/AHCIP-Stats-Suppl-13.pdf>
- Alberta Health Services. (n.d.). *Mental health therapist: Careers*. Retrieved October 21, 2013, from <http://www.albertahealthservices.ca/careers/page100.asp>
- American Psychological Association. (2013). *How does the APA define psychology?* Washington, DC: Author. Retrieved from <http://www.apa.org/support/about/apa/psychology.aspx#answer>
- American Psychological Association. (2014). *Psychology in primary care*. Washington, DC: Author. Retrieved from <http://www.apa.org/about/gr/ issues/health-care/primary-care.aspx>
- Association of Universities and Colleges of Canada. (n.d.). *List of Canadian universities*. Retrieved from <http://www.aucc.ca/canadian-universities/our-universities/>
- Bachrach, L. L. (1996). Psychosocial rehabilitation and psychiatry: What are the boundaries? *Canadian Journal of Psychiatry, 41*, 28–35.
- Barlow, D. H. (2004). Psychological treatments. *American Psychologist, 59*, 869–878. <http://dx.doi.org/10.1037/0003-066X.59.9.869>
- Beins, B., Landrum, E., & Posey, D. (2011). *Specialized critical thinking: Scientific and psychological literacies* (Presidential Task Force on Psychological Literacy White Paper, p. 24). Washington DC: American Psychological Association.
- Belar, C. D. (1998). Graduate education in clinical psychology. "We're not in Kansas anymore." *American Psychologist, 53*, 456–464. <http://dx.doi.org/10.1037/0003-066X.53.4.456>
- Bijl, R. V., de Graaf, R., Hiripi, E., Kessler, R. C., Kohn, R., Offord, D. R., . . . Wittchen, H.-U. (2003). The prevalence of treated and untreated mental disorders in five countries. *Health Affairs, 22*, 122–133. <http://dx.doi.org/10.1377/hlthaff.22.3.122>
- Bland, R., & Renouf, N. (2001). Social work and the mental health team. *Australasian Psychiatry, 9*, 238–241. <http://dx.doi.org/10.1046/j.1440-1665.2001.00335.x>
- Block, R., Slomp, M., Patterson, S., Jacobs, P., Ohinmaa, A. E., Yim, R., & Dewa, C. S. (2008). The impact of integrating mental and general health services on mental health's share of total health care spending in Alberta. *Psychiatric Services, 59*, 860–863. <http://dx.doi.org/10.1176/appi.ps.59.8.860>
- Borins, M., Holzapfel, S., Tudiver, F., & Bader, E. (2007). Counselling and psychotherapy skills training for family physicians. *Families, Systems & Health, 25*, 382–391. <http://dx.doi.org/10.1037/1091-7527.25.4.382>
- Boulé, C. J., & McSherry, J. A. (2002). Patients with eating disorders. How well are family physicians managing them? *Canadian Family Physician/ Médecin de Famille Canadien, 48*, 1807–1813.
- Boyack, K. W., Klavans, R., & Börner, K. (2005). Mapping the backbone of science. *Scientometrics, 64*, 351–374. <http://dx.doi.org/10.1007/s11192-005-0255-6>
- Bray, J. H. (2010). The future of psychology practice and science. *American Psychologist, 65*, 355–369. <http://dx.doi.org/10.1037/a0020273>
- Brown, K. J., & Roberts, M. C. (2000). Future issues in pediatric psychology: Delphic survey. *Journal of Clinical Psychology in Medical Settings, 7*, 5–15. <http://dx.doi.org/10.1023/A:1009589101926>
- Calgary Foothills Primary Care Network. (2007). *Mental health*. Retrieved October 21, 2013, from <http://www.cfpcn.ca/Programs/MentalHealth/tabid/77/Default.aspx>
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada. (2010). *Tri-council policy statement: Ethical conduct for research involving humans* (Cat. No. MR21–18/2010E-PDF). Ottawa, Canada: Her Majesty the Queen in Right of Canada. Retrieved from http://www.pre.ethics.gc.ca/pdf/eng/tcps2/TCPS_2_FINAL_Web.pdf
- Canadian Psychological Association. (2013). *Provincial and territorial licensing requirements*. Retrieved October 31, 2013, from <http://www.cpa.ca/accreditation/PTlicensingrequirements/>
- Chambless, D. L., & Ollendick, T. H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology, 52*, 685–716. <http://dx.doi.org/10.1146/annurev.psych.52.1.685>
- Chomienne, M.-H., Grenier, J., Gaboury, I., Hogg, W., Ritchie, P., & Farmanova-Haynes, E. (2011). Family doctors and psychologists working together: Doctors' and patients' perspectives. *Journal of Evaluation in Clinical Practice, 17*, 282–287. <http://dx.doi.org/10.1111/j.1365-2753.2010.01437.x>
- Clarke, D. E., & Polimeni-Walker, I. (2004). Treating individuals with eating disorders in family practice: A needs assessment. *Eating Disorders: The Journal of Treatment & Prevention, 12*, 293–301. <http://dx.doi.org/10.1080/10640260490521343>
- Cohen, K. R., & Peachey, D. (2014). Access to psychological services for Canadians: Getting what works to work for Canada's mental and behavioral health. *Canadian Psychology, 55*, 126–130. <http://dx.doi.org/10.1037/a0036499>
- The College of Family Physicians of Canada. (2010). *National physician survey, 2010*. Ottawa, Canada. Retrieved from <http://nationalphysiciansurvey.ca/result/2010-fp/>
- The College of Family Physicians of Canada. (2013). *Results for family physicians: Q3B Rate your access to the following. National physician survey 2013*. Retrieved October 28, 2013, from <http://nationalphysiciansurvey.ca/wp-content/uploads/2013/09/2013-FPGP-EN-Q3b.pdf>
- Cox, D. W. (2014). Gender differences in professional consultation for a mental health concern: A Canadian population study. *Canadian Psychology, 55*, 68–74. <http://dx.doi.org/10.1037/a0036296>

- De Los Reyes, A., Bunnell, B. E., & Beidel, D. C. (2013). Informant discrepancies in adult social anxiety disorder assessments: Links with contextual variations in observed behavior. *Journal of Abnormal Psychology, 122*, 376–386. <http://dx.doi.org/10.1037/a0031150>
- D'Eon, J. (2012, Winter). In matters of health—Psychology matters. *Psynopsis, 34*, 16. Available at http://www.cpa.ca/docs/File/Psynopsis/2012/Psynopsis_Winter2012.pdf
- Dewa, C. S., & Lin, E. (2000). Chronic physical illness, psychiatric disorder and disability in the workplace. *Social Science & Medicine, 51*, 41–50. [http://dx.doi.org/10.1016/S0277-9536\(99\)00431-1](http://dx.doi.org/10.1016/S0277-9536(99)00431-1)
- Dozois, D. J. A., & Firestone, P. (2010). *Abnormal psychology perspectives* (4th ed.). Toronto, Canada: Pearson Canada.
- Drapeau, M. (Ed.). (2014). Access to psychological services [Special issue]. *Canadian Psychology/Psychologie canadienne, 55*, 57–144.
- Drapeau, M., & Hunsley, J. (2014). Where's the science? Introduction to a Special Issue of Canadian Psychology on Science in Psychology. *Canadian Psychology, 55*, 145–152. <http://dx.doi.org/10.1037/a0037321>
- Duckett, S. J. (2005). Interventions to facilitate health workforce restructuring. *Australia and New Zealand Health Policy, 2*, 14–19. <http://dx.doi.org/10.1186/1743-8462-2-14>
- Duckett, S. (2009). Interdependence of the health and education sectors in meeting health human resource needs. *Healthcare Papers, 9*, 30–34.
- Ekos. (2011). *Survey of Canadian attitudes toward psychologists and accessing psychological services*. Retrieved October 21, 2013, from [http://www.cpa.ca/docs/file/poll/NationalFindings\(English\).pdf](http://www.cpa.ca/docs/file/poll/NationalFindings(English).pdf)
- Gibson, F. (2009). Multiprofessional collaboration in children's cancer care: Believed to be a good thing but how do we know when it works well? *European Journal of Cancer Care, 18*, 327–329. <http://dx.doi.org/10.1111/j.1365-2354.2009.01131.x>
- Gordon, J. T. (2012). Emergency department junior medical staff's knowledge, skills and confidence with psychiatric patients: A survey. *The Psychiatrist Online, 36*, 186–188. doi:10.1192/pb.bp.111.035188
- Grenier, J. (2010, Winter). Psychology on the front line of primary care. *Psynopsis, 32*, 3–4.
- Happell, B. (2001). Comprehensive nursing education in Victoria: Rhetoric or reality? *Journal of Psychiatric and Mental Health Nursing, 8*, 507–516. <http://dx.doi.org/10.1046/j.1365-2850.2001.00418.x>
- Hartigan-Rogers, J. A., Cobbett, S. L., Amirault, M. A., & Muise-Davis, M. E. (2007). Nursing graduates' perceptions of their undergraduate clinical placement. *International Journal of Nursing Education Scholarship, 4*, e9. <http://dx.doi.org/10.2202/1548-923X.1276>
- Hayes, L. J., Orchard, C. A., McGillis Hall, L., Nincic, V., O'Brien-Pallas, L., & Andrews, G. (2006). Career intentions of nursing students and new nurse graduates: A review of the literature. *International Journal of Nursing Education Scholarship, 3*(1), e26. <http://dx.doi.org/10.2202/1548-923X.1281>
- Health Canada. (2002). *A report on mental illnesses in Canada* (p. 111). Ottawa, Canada: Author. Retrieved from http://www.phac-aspc.gc.ca/publicat/miic-mmacc/pdf/men_ill_e.pdf
- Health Canada. (2006). *Pan-Canadian health human resource strategy final report of the federal advisor on wait times* [Health Canada, 2006]. Ottawa, Canada: Author. Retrieved on May 6, 2013 from <http://www.hc-sc.gc.ca/hcs-sss/pubs/system-regime/2006-wait-attente/hhr-rhs/index-eng.php>
- Hodges, B., Inch, C., & Silver, I. (2001). Improving the psychiatric knowledge, skills, and attitudes of primary care physicians, 1950–2000: A review. *The American Journal of Psychiatry, 158*, 1579–1586. <http://dx.doi.org/10.1176/appi.ajp.158.10.1579>
- Horwitz, S. M., Kelleher, K. J., Stein, R. E. K., Storfes-Isser, A., Youngstrom, E. A., Park, E. R., . . . Hoagwood, K. E. (2007). Barriers to the identification and management of psychosocial issues in children and maternal depression. *Pediatrics, 119*, e208–e218. <http://dx.doi.org/10.1542/peds.2005-1997>
- Hunsley, J., Elliott, K. P., & Therrien, Z. (2014). The efficacy and effectiveness of psychological treatments for mood, anxiety, and related disorders. *Canadian Psychology, 55*, 161–176. doi:10.1037/a0036933
- Hunsley, J., Lee, C. M., & Aubry, T. (1999). Who uses psychological services in Canada? *Canadian Psychology, 40*, 232–240. <http://dx.doi.org/10.1037/h0086839>
- Intern. (2012). In *Merriam Webster's online dictionary*. Retrieved from <http://www.merriam-webster.com/dictionary/intern>
- Jacobs, P., Yim, R., Ohinmaa, A., Eng, K., Dewa, C. S., Bland, R., . . . Slomp, M. (2008). Expenditures on mental health and addictions for Canadian provinces in 2003 and 2004. *Canadian Journal of Psychiatry, 53*, 306–313.
- Janda, L. H., England, K., Lovejoy, D., & Drury, K. (1998). Attitudes toward psychology relative to other disciplines. *Professional Psychology: Research and Practice, 29*, 140–143. <http://dx.doi.org/10.1037/0735-7028.29.2.140>
- Jesmin, S., Thind, A., & Sarma, S. (2012). Does team-based primary health care improve patients' perception of outcomes? Evidence from the 2007–08 Canadian survey of experiences with primary health. *Health Policy, 105*, 71–83. doi:10.1016/j.healthpol.2012.01.008
- Klavans, R., & Boyack, K. W. (2009). Toward a consensus map of science. *Journal of the American Society for Information Science and Technology, 60*, 455–476. <http://dx.doi.org/10.1002/asi.20991>
- Kohn, R., Saxena, S., Levav, I., & Saraceno, B. (2004). The treatment gap in mental health care. *Bulletin of the World Health Organization, 82*, 858–866.
- Lindberg, M., Vergara, C., Wild-Wesley, R., & Gruman, C. (2006). Physicians-in-training attitudes toward caring for and working with patients with alcohol and drug abuse diagnoses. *Southern Medical Journal, 99*, 28–35. <http://dx.doi.org/10.1097/01.smj.0000197514.83606.95>
- Luborsky, L., German, R. E., Diguier, L., Berman, J. S., Kirk, D., Barrett, M. S., & Luborsky, E. (2004). Is psychotherapy good for your health? *American Journal of Psychotherapy, 58*, 386–405.
- Mash, E. J., & Hunsley, J. (2007). Assessment of child and family disturbance: A developmental-systems approach. In E. J. Mash & R. A. Barkley (Eds.), *Assessment of childhood disorders* (4th ed., pp. 3–51). New York, NY: Guilford Press.
- Menahem, S. (2009). Pediatricians' role in providing mental health care for children and adolescents. *Journal of Developmental and Behavioral Pediatrics, 30*, 104. <http://dx.doi.org/10.1097/DBP.0b013e3181976b95>
- Meyer, G. J., Finn, S. E., Eyde, L. D., Kay, G. G., Moreland, K. L., Dies, R. R., . . . Reed, G. M. (2001). Psychological testing and psychological assessment: A review of evidence and issues. *American Psychologist, 56*, 128–165. <http://dx.doi.org/10.1037/0003-066X.56.2.128>
- Mojtabai, R., & Olfson, M. (2006). Treatment seeking for depression in Canada and the United States. *Psychiatric Services, 57*, 631–639. doi:10.1176/appi.ps.57.5.631
- Morley, C. P., Flad, J. R., Arthur, M., Recker-Hughes, C., Barzee, K. A., Bailey, R. E., & Manyon, A. T. (2011). Pilot evaluation of a biopsychosocial integrated standardized patient examination in a family medicine clerkship. *International Journal of Psychiatry in Medicine, 41*, 309–328. doi:10.2190/PM.41.4.b
- Murdoch, D. (2013, January). What can we learn from IBM, Sony and Apple? *Psynopsis, 19*.
- Murdoch, D., & Eggleton, J. (2014, June). *Comparison of entry level requirements across Canada for professions providing front line mental health services*. Paper presented at Canadian Psychological Association Annual Convention, Vancouver, British Columbia, Canada.
- Murdoch, D., Johnson, C., Barva, C., & Moses, R. (2009). Setting the Direction: Minister's forum—A view from the sidelines. *Psynposium, 19*(3), 15–17.
- Myhr, G., & Payne, K. (2006). Cost-effectiveness of cognitive-behavioural therapy for mental disorders: Implications for public health

- care funding policy in Canada. *Canadian Journal of Psychiatry*, 51, 662–670. <http://www.ncbi.nlm.nih.gov/pubmed/17052034>
- Nunes, M., Walker, J. R., Syed, T., De Jong, M., Stewart, D. W., Provencher, M. D., . . . Furer, P. (2014). A national survey of student extended health insurance programs in postsecondary institutions in Canada: Limited support for students with mental health problems. *Canadian Psychology*, 55, 101–109. <http://dx.doi.org/10.1037/a0036476>
- Patrick, J. (2005). The economic value of psychology in Australia: 2001. *Australian Psychologist*, 40, 149–158. <http://dx.doi.org/10.1080/00050060500243459>
- Peterson, D. R. (2003). Unintended consequences: Ventures and misadventures in the education of professional psychologists. *American Psychologist*, 58, 791–800. <http://dx.doi.org/10.1037/0003-066X.58.10.791>
- Practicum. (2012). In *Merriam Webster's online dictionary*. Retrieved from <http://www.merriam-webster.com/dictionary/practicum>
- Quick guide to 2011 CPA accreditation criteria*. (2011). Ottawa, Canada: Canadian Psychological Association. Retrieved from <http://www.cpa.ca/docs/File/Accreditation/Quick%20Guide%20-%2001d%20vs%20New%20S&P%20-%20Nov%202011.pdf>
- Roberge, P., Fournier, L., Menear, M., & Duhoux, A. (2014). Access to psychotherapy for primary care patients with anxiety disorders. *Canadian Psychology*, 55, 60–67. <http://dx.doi.org/10.1037/a0036317>
- Romanow, R., & Marchildon, G. (2003). Psychological services and the future of health care in Canada. *Canadian Psychology*, 44, 283–295. <http://dx.doi.org/10.1037/h0086954>
- Rozensky, R. H., & Janicke, D. M. (2012). Commentary: Healthcare reform and psychology's workforce: Preparing for the future of pediatric psychology. *Journal of Pediatric Psychology*, 37, 359–368. <http://dx.doi.org/10.1093/jpepsy/jsr111>
- Scherger, E. J. (2004). Foreword. In R. G. Frank, S. H. McDaniel, J. H. Bray, & M. Heldring (Eds.), *Primary care psychology* (pp. xi–xii). Washington, DC: American Psychological Association.
- Smith, S. R. (2007). Making sense of multiple informants in child and adolescent psychopathology: A guide for clinicians. *Journal of Psychoeducational Assessment*, 25, 139–149. <http://dx.doi.org/10.1177/0734282906296233>
- Stephens, T., & Joubert, N. (2001). The economic burden of mental health problems in Canada. *Chronic Diseases in Canada*, 22, 18–23.
- Stricker, G., & Trierweiler, S. J. (1995). The local clinical scientist: A bridge between science and practice. *American Psychologist*, 50, 995–1002. <http://dx.doi.org/10.1037/0003-066X.50.12.995>
- Stricker, G., Widiger, T. A., & Weiner, I. B. (2003). *Handbook of psychology: Clinical psychology* (Vol. 8). Hoboken, NJ: Wiley.
- Takhar, J., Haslam, D., Hobbs, A., & McAuley, L. (2010). Enriching relationships through assessment of the continuing medical education (CME) needs of family physicians working within a collaborative care model. *Current Psychiatry Reviews*, 6, 210–218. <http://dx.doi.org/10.2174/157340010791792635>
- Talbot, F., Clark, D. A., Yuzda, W. S., Charron, A., & McDonald, T. (2014). “Gatekeepers” perspective on treatment access for anxiety and depression: A survey of New Brunswick family physicians. *Canadian Psychology*, 55, 75–79. <http://dx.doi.org/10.1037/a0036449>
- Westheimer, J. M., Steinley-Bumgarner, M., & Brownson, C. (2008). Primary care providers' perceptions of and experiences with an integrated healthcare model. *Journal of American College Health*, 57, 101–108. <http://dx.doi.org/10.3200/JACH.57.1.101-108>
- Whyte, J. M. (2008). Consumer commentary special issue: Collaborative care. *Canadian Journal of Community Mental Health*, 27, 11–14.
- Wilkinson, J., Dreyfus, D., Cerreto, M., & Bokhour, B. (2012). “Sometimes I feel overwhelmed”: Educational needs of family physicians caring for people with intellectual disability. *Intellectual and Developmental Disabilities*, 50, 243–250. <http://dx.doi.org/10.1352/1934-9556-50.3.243>
- World Health Organization. (2013). *Mental health: Health topics*. Retrieved from http://www.who.int/topics/mental_health/en/
- Wynaden, D., Orb, A., McGowan, S., & Downie, J. (2000). Are universities preparing nurses to meet the challenges posed by the Australian mental health care system? *The Australian and New Zealand Journal of Mental Health Nursing*, 9, 138–146. <http://dx.doi.org/10.1046/j.1440-0979.2000.00175.x>

Received February 12, 2014

Revision received August 20, 2014

Accepted September 2, 2014 ■