

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

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Abstract

This study examines the differences in mental health experiences of workers in professional and non-professional roles, with a particular focus on the influence of gender. We examine: i) the perceived mental health of a subset of professional workers including accounting, academia, dentistry, medicine, nursing, and teaching, chosen because they represent different gender composition and sectors; and ii) work stress and work absences. Statistical analyses were applied to data from the Canadian Community Health Survey and a related Mental Health and Well-Being survey. Those in the selected professions reported better mental health, higher job satisfaction, and a lower prevalence of mental disorders, but higher self-perceived life and work stress compared to workers in non-professional roles. Workers in these professions reported higher job security and higher job control, but also higher psychological demands. Women in these professions showed significantly higher physical exertion and lower job authority and *higher rates of work absences*.

Keywords

Mental health, work related stress, professional workers, gender differences

Introduction

Workplace mental health is an issue of rising importance. Indeed, the workplace is where we spend most of our time and as such plays a critical role in our overall mental health. Work can be both positively rewarding but workplace stress can also undermine mental health. Left unacknowledged, lost productivity from two of the most prevalent mental health issues—*anxiety and depression*—costs the global economy approximately \$1 trillion US each year (Health, 2020). The growing price tag associated with mental health issues is due in large part to absenteeism and turnover, as well as reduced productivity and organizational citizenship behavior and presenteeism (Kelloway et al., 2005).

Professional workers are a particularly interesting subset of workers to examine their mental health experiences. Professions are occupations based on specialized educational training based on a foundation of esoteric knowledge, highlighting the important of competence and mental acuity in the production of professional service work (Brante, 1988). Mental health challenges can be uniquely complex given these roles (van den Burg et al., 2008). The link between professional acuity and mental health is a neglected topic in both the mental health and the sociology of professions literatures. Where addressed, the focus tends to be on how employers can attract professionals, unleashing their innovative potential and productivity (Mutlu, 2020; Giaouque et al., 2010), ignoring the implications of unceasing productivity for mental health, including burnout. Further, because of the client-facing nature of professional work, many professional workers are regulated, and as such face unique threats associated with disclosure of mental health issues as it relates to the maintenance of their professional license.

An explicit gender lens has been conspicuously absent in the study of workplace mental health, regardless of whether focused on professional or non-professional workers. This is surprising given it is such a significant factor in the experience of mental health and the help-seeking (Affleck et al., 2018; Seidler, Dawes, Rice, Oliffe & Dhillon, 2016). Men and women disclose and access supports differently, and experience tensions created by workplace absences differently, due in part to inequities in social relations at work. Gender is not only embodied in individuals but also in the occupations and professions within which they work (Davies, 1996), but the mental health implications of these dynamics are rarely explored.

Our analysis aims to examine: i) the perceived and measured mental health and health conditions of a subset of professional workers; and ii) the work-related conditions including various elements of work stress and work absences. Our analysis also takes gender more fully into consideration across both issues, both at an individual and professional levels.

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

The professional workers we focus on represent a mix of professional status, gender composition and work context features. Dentistry, medicine, academia, and accounting are traditionally masculine professions that are feminizing (Phillips, 2009; McKay & Quiñonez, 2012; Gammie & Whiting, 2013; Hedden et al., 2014), whereas nursing and teaching are traditionally and persistently feminine. The predominant gender of the professions reflects their varying degrees of status within their respective systems of professions—with academia, accounting, medicine, and dentistry reflecting more dominant, and nursing and teaching more subordinate positions (Davies 1996). Related to this, the work contexts for these professional workers are also diverse, ranging from unionized salaried positions of nursing, teaching and academia, with both regular and irregular schedules, to independent public sector contractors in solo or group practice, to owners of clinics in the private sector (physicians, dentists, and accountants). Although there are some distinct differences between the sectors that these professional and non-professional workers work, there is some overlap for workers considered non-professional in health care and education. Moreover, there are feminized and masculinized sectors across both professional and non-professional work.

The datasets upon which we draw enables us to compare the circumstances of these professional workers with non-professional workers. The questions guiding our research include: How does the mental health of professional compare across cadres and in contrast with non-professional workers? How does gender influence the difference in mental health within professional workers and between professional and non-professional workers?

Literature Review

Workplace Mental Health

There has been an increased interest in workplace mental health and psychologically healthy workplaces internationally. Mental health challenges, such as depression, anxiety disorders, and adjustment disorders, present a major problem in the OECD countries (OECD, 2015). Research shows that adverse working conditions and management practices can lead to work stress (Bhui et al., 2016; Cazabat, Barthe & Cascino, 2008), and in psychological distress and other mental health issues among the employees (Chandola et al., 2010; Nieuwenhuijsen, Bruinvels & Frings-Dresen, 2010).

The influence of psychological health and safety in the workplace is gaining traction among regulators, insurers, and researchers. In 2013, the Mental Health Commission of Canada launched the National Standard of Canada for Psychological Health and Safety—the first of its kind in the world. It is a set of voluntary guidelines, tools, and resources intended to guide organizations in promoting mental health and preventing psychological harm at work. Most recently, the World Health Organization declared in May 2019 that burnout is an

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

occupational phenomenon, rather than as a medical condition, marking a turn to explicitly develop evidence-based guidelines on mental well-being in the workplace.

Gender Differences in Work-Related Mental Health

Research on workplace mental health reveals poorer mental health among women (Harnois & Bastos, 2018; Lamontagne & Shann, 2012; Pedersen & Minotte, 2016). For instance, one Australian study revealed how the prevalence of poor mental health was significantly higher in working women than working men (Lamontagne & Shann, 2012). Such gender differences in mental health at work can be attributed to a variety of factors. These include the inequitable distribution of working and employment conditions, as well as gender-based harassment and bullying (Attell et al., 2017; Campos-Serna, Ronda-Pérez, Artazcoz, Moen & Benavides, 2013; Dionisi, Barling & Dupré, 2012; Elwér, Harryson, Bolin & Hammarström 2013; Geoffroy & Chamberland, 2015; Harnois & Bastos, 2018). Gender differences in mental health at work is also related to the gendered division of labour at the home. Job strain has been found to have a direct adverse effect on life stress among women but not among men (Padkapayeva, et al., 2018).

Work-Related Mental Health of Professional Workers

At present, there is a dearth of literature on work-related mental health of professional workers broadly, though in some cases there exists profession-specific literature.

Health professionals often experience mental health issues, the most common being: stress (Ahmad et al., 2015; Rice, Glass, Ogle & Parsian, 2014), burnout (Galian-Munoz, Ruiz-Hernandez, Llor-Esteban & Lopez-Garcia, 2014; Huri, Bağış, Eren, Umaroğlu & Orhan, 2016), anxiety (Puriene et al., 2008; Saksvik-Lehouillier, Bjorvatn, Hetland & Mjeldheim, 2012), depression (Huri et al., 2016; Ohler, Kerr & Forbes, 2010) PTSD (Beck, Logiudice & Gable, 2015; Ben-Ezra, Palgi, Walker, Many & Hamam-Raz, 2014), and substance use/addiction (Merlo, Trejo-Lopez, Conwell & Rivenbark, 2013; Monroe & Kenaga, 2011).

Some of these mental health challenges are rooted in the irregular and inflexible work schedules, shift work, and required overtime (Ahmad et al., 2015; Pezaro, Clyne, Turner, Fulton & Gerada, 2016;), but there is also the inherently stressful nature of their work (Crompton & Lyonette, 2011; Hakanen, Schaufeli & Ahola, 2008; Jolivet et al., 2010). Studies also focus on the role of work-related factors—such as settings, and models of care—in mental health of healthcare workers (Boran, Shawaheen, Khader, Amarin & Hill Rice, 2012; Hildingsson, Westlund & Wiklund, 2013; Newton, McLachlan, Willis & Forster, 2014).

Professional workers in the education sector face unique mental health challenges. Academic professionals are noted as exhibiting a spectrum of mental health issues, including stress (Berg, Huijbens & Gutzon Larsen, 2016; Craft & Masegerg-Tomlinson, 2015), depression (Deaville, 2009), anxiety (Berg et al., 2016), and bipolar disorder (England, 2016; Skogen, 2012). A recent RAND Europe (2017) report detailed that about 37% of academics

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

have common mental health disorders and those levels of burnout appear higher among university staff than in the general population. Studies show how the increasing infiltration of performance management metrics in academia, as well as heavy workloads and long hours lead to growing stress levels among academics (Berg et al., 2016; Shin & Jung, 2014; Higher Education Network, 2015). In the case of secondary and elementary school teachers, the literature points to their experiences of a range of stress-related mental health issues including sleep disorders (Do Valle, Do Valle, Valle, Malvezzi, & Reimao, 2013; Vannai, Ukawa & Tamakoshi, 2015), depression (Brunsting, Sreckovic & Lane, 2014; Ferguson, Frost & Hall, 2012), burnout (Kosir, Tement, Licardo & Habe, 2015; Skaalvik & Skaalvid 2015), and anxiety (Brunsting, Sreckovic & Lane, 2014).

Research on professional workers in other sectors is also growing. In accounting, for example, there is some research that highlights that four in ten accountants suffer from stress related problems (White, 2021). Some studies highlight how role conflict, ambiguity, overload, as well as a dominant supervisor are the most common sources of occupational stress, burnout, and depression among accountants (Kelly & Barrett, 2011; Jones, Norman & Wier, 2010; Ozkan, Ozdevecioglu, Kaya & Özs, 2015). A Turkish study, for example, identified work-related stress as an important factor influencing life satisfaction and burnout levels of accountants (Ozkan & Ozdevecioglu 2013). While literature offers some insights into the impact of gender on accountants' work and health (Gallhofer, Paisey, Roberts, & Tarbert, 2011; Guthrie & Jones, 2012; Dambrin & Lambert, 2008), this issue remains insufficiently explored for this profession.

Mental Health, Professional Work & Gender

The relative lack of literature focused on the influence of gender is remarkable because women predominate in some professions, such as nursing and teaching, and their numbers are growing in other traditionally male professions, such as medicine, academia, and accounting (Phillips, 2009; Gammie & Whiting, 2013; Hedden et al., 2014). Where data do exist on specific professions, these are rarely compared across professions, nor from an explicit gender lens (Adams, Lee, Pritchard & White, 2010; Dewa, et al., 2014; Frank & Segura, 2009). Nurses, for example, indicate that they had a greater chance of experiencing depression than other workers (Shields & Wilkins, 2006), some of which could be attributable to their predominant female gender but also to the gendered nature of their work. In the case of medicine, female doctors had 32 per cent higher odds of experiencing depression than their male colleagues (Canadian Medical Association, 2018). The importance of gender on teacher mental health is only emerging with one study noting how male teachers are less likely to reach out for social support, reflecting the broader gender trends in help seeking for mental health concerns (Ferguson, Mang & Frost, 2017; Klassen & Chiu, 2010; Klassen & Chiu, 2011).

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

The literature has not yet fully considered gender and work-related mental health among women professional workers as a broader group to identify whether health consequences are *profession* specific or *gender* specific. Although some research exists for specific professions, there is a need for a deeper understanding of impact of gender on mental experiences of workers in both professional and non-professional sectors. The aim of this study was to understand differences in workplace mental health experiences between professional and non-professional workers, with a particular focus on the influence of gender.

Methods

Data sources

This article features analyses based on data from the combined 2013/2014 Canadian Community Health Survey (CCHS), which collects information about health status, health care use, and health determinants for about 98% of the population aged 12 or older. It covers household residents in the provinces and territories; but members of the Canadian Forces and residents of correctional institutions, those who live in First Nations communities (“reserves”) or other Indigenous settlements, and some remote areas are excluded. The CCHS produces an annual microdata file and a second microdata file combining two years of data, every second year. The combined data are the same as the two individual annual data files, but also contain data for Yukon, the Northwest Territories, and Nunavut. The two-year data can be used to disaggregate estimates to represent smaller populations and rare characteristics. In total, 185,176 of the selected units in the 2013-2014 CCHS were in-scope for the survey, out of which a response was obtained for 128,310 respondents representing 30,014,589 individuals aged 12 or older. The survey’s response rate was 66.2%. In this study, those aged 15 or older who worked were selected for analysis. Its sample size was 62,359 representing 17,804,335 Canadians. Table 1 shows selected characteristics of the sample.

	All			Men			Women		
	Sample N	Weighted N	%	Sample N	Weighted N	%	Sample N	Weighted N	%
Case study professions	5,329	1,482,920	8.33	1,439	461,986	4.91	3,890	1,020,934	12.15
Doctors	276	95,087	0.53	150	60,624	0.64	126	34,463	0.41
Dentists	63	24,251	0.14	42	13,549	0.14	21	10,702	0.13
Nurses	1,340	343,932	1.93	117	35,363	0.38	1,223	308,569	3.67
Professors	870	277,574	1.56	403	137,256	1.46	467	140,318	1.67
Teachers	1,936	472,597	2.65	407	103,280	1.1	1,529	369,317	4.39
Accountants	795	256,495	1.44	313	110,189	1.17	482	146,306	1.74
Other professional /managerial workers	11,221	3,640,146	20.45	5,893	2,159,335	22.97	5,328	1,480,811	17.62
Non professional workers	45,809	12,681,269	71.23	22,874	6,779,354	72.12	22,935	5,901,915	70.23
Total	62,359	17,804,335	100.00	30,206	9,400,675	100.00	32,153	8,403,660	100.00

Data source: CCHS 2013/2014

Table 1. Occupational distribution of case study professions, aged 15+, Canada 2013-14.

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

In addition to the annual survey, every five years a specialized focused content theme is selected. This analysis also includes the 2012 Canadian Community Health Survey–Mental Health (CCHS-MH) focused content to measure mental morbidity. The 2012 CCHS-MH measured prevalence of six disorders (major depressive episode, bipolar disorder; generalized anxiety disorder; alcohol abuse and dependence; cannabis abuse and dependence; and other substance abuse and dependence) in accordance with the World Mental Health—Composite International Diagnostic Interview 3.0 (WMH-CIDI). WMH-CIDI is a standardized instrument for the assessment of mental disorders and conditions according to DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition) criteria, and is widely used in population surveys. CCHS-MH’s sample consisted of the household population aged 15 or older in the 10 provinces and had similar exclusions as the CCHS. The response rate was 68.9%, yielding a sample of 13,989, which represented 28.3 million Canadians. In this study, those aged 15 to 75 who worked or were absent from work in the week before the survey were selected for analysis. Regardless of the number of hours worked, all types of work were included such as part-time jobs, seasonal work, contract work, self-employment, baby-sitting and any other paid work. The sample size was 13,989 representing 18 million individuals (Table 2).

	All			Men			Women		
	Sample N	Weighted N	%	Sample N	Weighted N	%	Sample N	Weighted N	%
Case study professions	1,084	1,401,460	7.79	302	422,307	4.40	782	979,153	11.64
Doctors	70	101,002	0.56	39	61,652	0.64	31	39,350	0.47
Dentists	22	40,659	0.23	...			F
Nurses	269	312,519	1.74	17	17,387	0.18	252	295,132	3.51
Professors	205	263,027	1.46	106	137,825	1.44	99	125,202	1.49
Teachers	374	516,288	2.87	79	114,418	1.19	295	401,870	4.78
Accountants	139	157,828	0.88	47	61,542	0.64	92	96,286	1.14
Other professional /managerial workers	2,728	3,860,667	21.45	1,572	2,280,809	23.79	1,156	1,579,857	18.78
Non professional workers	10,177	12,738,214	70.77	5,002	6,884,650	71.81	5,175	5,853,565	69.58
Total	13,989	18,000,341	100.00	6,876	9,587,766	100.00	7,113	8,412,575	100.00

F Suppressed due to small cell size

Data source: CCHS 2012

Table 2. Occupational distribution of case study professions, aged 15+, Canada, 2012.

Case Studies

As noted above, a select group of professions was chosen to enable a more in-depth comparative analysis of the findings with a particular focus on gender. The professional workers included in this analysis focused on physicians, dentists, nurses, professors, teachers, and accountants. These professions represented a range of professions where women predominate, and where their presence is growing (i.e., feminisation).

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

In the surveys, Case Study Professional (CSP) workers and non-professional workers were identified based on self-reported occupations translated to the 4-digit codes from the National Occupational Classification for Statistics (NOC-S) 2006 from the CCHS 2013/2014 data and National Occupational Classification (NOC) 2011 for the CCHS 2012 data. Non-professional workers were workers whose skill level was not professional (the second digit of NOC codes was not 1) and skill type was not management (in 2006 NOC-S, the first digit of the codes was not A; in 2011 NOC, the first digit of the codes was not 0). To ensure consistency of the occupation variables in the analysis, the table of “Concordance: NOC-S 2006 and NOC 2011” (Statistics Canada, 2015) was used.

Measures

- **Self-rated mental health** was measured by asking respondents, “In general, would you say your mental health is: excellent? very good? good? fair? poor?” If the responses were fair or poor the respondent was considered to have low self-rated mental health.
- **Self-reported mental disorder** was determined by asking respondents about disorders that had been diagnosed by a health professional and that had lasted or were expected to last six months or longer.
- **Self-rated health measures** an individual's perception of their overall health using a single question rated on a five-point scale (excellent, very good, good, fair, or poor). The responses of fair or poor were considered as low self-rated health.
- **Self-perceived life stress** measures an individual's perception of overall stress in life. Respondents was asked, “Thinking about the amount of stress in your life, would you say that most days are: not at all stressful? not very stressful? a bit stressful? quite a bit stressful? extremely stressful?” Respondents answering quite a bit or extremely were classified as having high self-perceived life stress.
- **Self-perceived work stress** at the main job or business in the past 12 months was measured by asking: “Would you say that most days at work were: not at all stressful? not very stressful? a bit stressful? quite a bit stressful? extremely stressful?” Respondents answering quite a bit or extremely were classified as having high self-perceived work stress.
- **Mental disorder** (WMH-CIDI) included measures of the prevalence of six mental disorders (major depressive episode, bipolar disorder, generalized anxiety disorder, and abuse of or dependence on alcohol, cannabis, or other drugs) in accordance with the World Health Organization version of the Composite International Diagnostic Interview 3.0 (Kessler and Ustun, 2004). In this analysis, respondents who met the criteria of any of the six disorders were classified as having “any mental disorder.”

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

- **Work stress** was measured in the CCHS using an abbreviated version of Karasek's Job Content Questionnaire (JCQ) (Karasek, 1985). The CCHS measured work stress of respondents working at jobs or businesses in the past 12 months. Twelve items in the JCQ are used to measure job control (skills discretion and decision latitude), psychological demands, job insecurity, physical exertion, and workplace social support. Each item was scored using a five-point Likert scale from strongly agree to strongly disagree (items 4, 5, 8 and 10 are reverse scored): Item Subscale
- **Skill Discretion** included three questions: 1) Your job requires that you learn new things; 2) Your job requires a high level of skill and 3) Your job requires that you do things over and over.
- **Decision Latitude/Authority** included questions about how 1) your job allows you freedom to decide how you do your job and 2) you have a lot to say about what happens in your job.
- **Psychological Demands** included questions related to how hectic one's job is and whether one was free from conflicting demands that others make.
- **Job insecurity**, was measured by the question, "Your job security is good."
- **Physical exertion**, was measured by, "Your job requires a lot of physical effort."
- **Workplace support** had three items: 1) You are exposed to hostility or conflict from the people you work with; 2) Your supervisor is helpful in getting the job done; and 3) The people you work with are helpful in getting the job done.
- **Job strain** is measured as a ratio of psychological demands and decision latitude which includes skill discretion and decision authority. This variable indicates whether the respondent experiences job strain.
- **Job satisfaction:** Respondents were asked if they were very, somewhat, not too or not at all satisfied with their jobs. Those not too satisfied or not at all satisfied were classified as having job dissatisfaction.
- **Work absence:** The CCHS asked: "Last week, did you have a job or business from which you were absent?" For this study, those who responded positively to this question were considered to be absent from work.

Analytical techniques

Analyses were conducted using SAS 9.3. Univariate analyses including correlations, t-tests, and chi-square analyses looking at group differences (between case study professions and non-professional workers) in work absence, work stress, and other self-rated health

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

measures. Survey sampling weights were applied so that the analyses would be representative of the Canadian population. Bootstrap weights were applied using SUDAAN 11.0 to account for the underestimation of standard errors due to the complex survey design. In this article, when two estimates are said to be different, this indicates that the difference was statistically significant at a 95% confidence level (p-value less than 5%).

Results

Demographics

The CSP workers in this analysis made up about 8.3% or 1.5 million workers in Canada in 2013/14 and a vast majority of these workers (69%) were women. The largest occupational group among CSP workers were teachers or professors (32% of all CSP workers); for all occupations of CSP except doctors and dentists, women were the majority. In contrast, non-professional workers made up approximately 71% of all workers in Canada and approximately 47% of whom were women.

On average, CSP workers were older than non-professional workers (average age: 43 vs. 41) and more educated. Among non-professional workers, 16% had obtained a bachelor's degree or higher whereas 74% of CSP workers had at least a bachelor's level education (97% for medical doctors; 53% for nurses; 84% for teachers; and 65% for accountants). In terms of income, 70% of overall CSP workers belonged to the top two income quintiles (42% in the highest and 28% in the second highest quintile) compared to 43% of non-professional workers.

Self-perceived Health and Mental Health

CSP workers reported better self-perceived health and mental health than non-professional workers. In general, there was a very low proportion of CSP workers who reported low self-perceived health (4%) or self-perceived mental health (4%). No gender differences among CSP workers were found. Similarly, CSP workers showed a low prevalence rate (past 12 months) of specific mental disorders. This was the case for both men and women in the CSP worker category who were less likely to have a mental disorder in the past 12 months than non-professional workers. Based on WMH-CIDI measurement in the 2012 CCHS, the prevalence rate of major depression for CSP workers was 4.0%; generalized anxiety disorder, 1.5%; mood disorder, 4.1%; substance use disorder, 1.5%. Notably, CSP workers were less likely to have self-disclosed substance use disorders (alcohol/drug) in the past 12 months compared to non-professional workers (1.5% vs. 5.9%).

Work & Stress

Stress

Figure 1 depicts the work and life stress of CSP and non-professional workers. CSP workers reported high (quite a bit or extremely stressful) work and life stress (33% and 38%

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

respectively) compared to non-professional workers (23% life stress and 25% work stress). Nurses reported the highest work stress (55%) followed by doctors (48%). Interestingly, doctors reported the highest life stress of all groups at 40% with nurses among the fewest to report high life stress (33%) yet nurses showed a much higher rate of life stress than non-professional workers who were the least likely to report high life stress (23%). Of all CSP groups, professors were the least frequent to report high life stress (30%) and least frequent to report work stress (28%) showing no significant differences from non-professional workers.

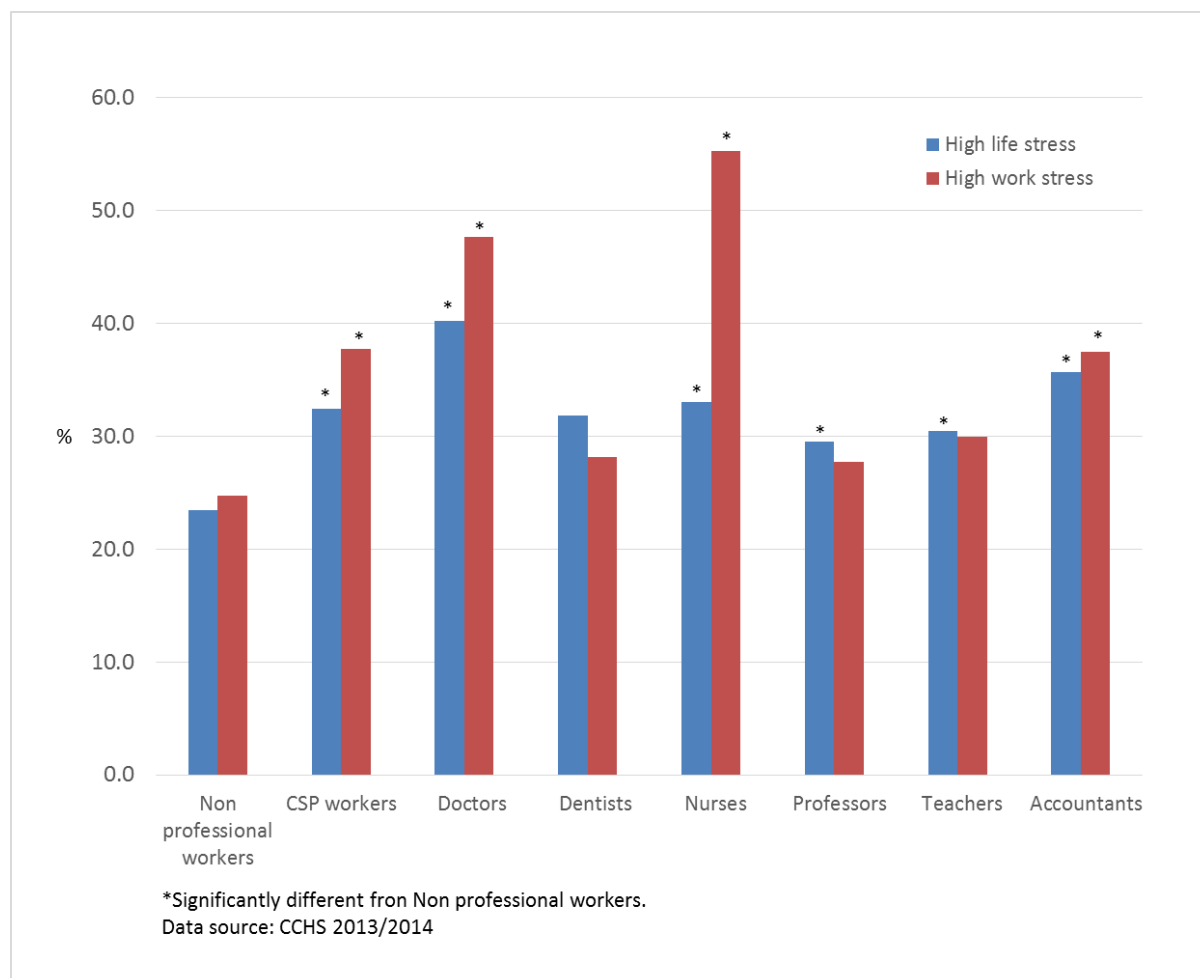


Figure 1. CSP workers reported high (quite a bit or extremely stressful) work and life stress compared to non-professional workers. Nurses reported the highest work stress while professors reported the lowest.

Figure 2 depicts the gender differences in work stress among the CSP and non-professional workers. Among CSP, women showed a higher rate of self-perceived work stress than men; differences were particularly striking for professors and teachers. Male teachers and professors were significantly less likely to report high work stress not only than their female colleagues but also than their non-professional counterparts. On the other hand, the rates of high self-perceived work stress for women professors and teachers were higher than the

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

rates for non-professional workers. While relative to the other CSP professions, fewer professors and teachers reported high work stress, these are the only two professions that displayed a gender difference suggesting the importance of the intersection of gender and sector and that for work stress, the sector is more important than gender. No gender differences were found for the other CSP professions.

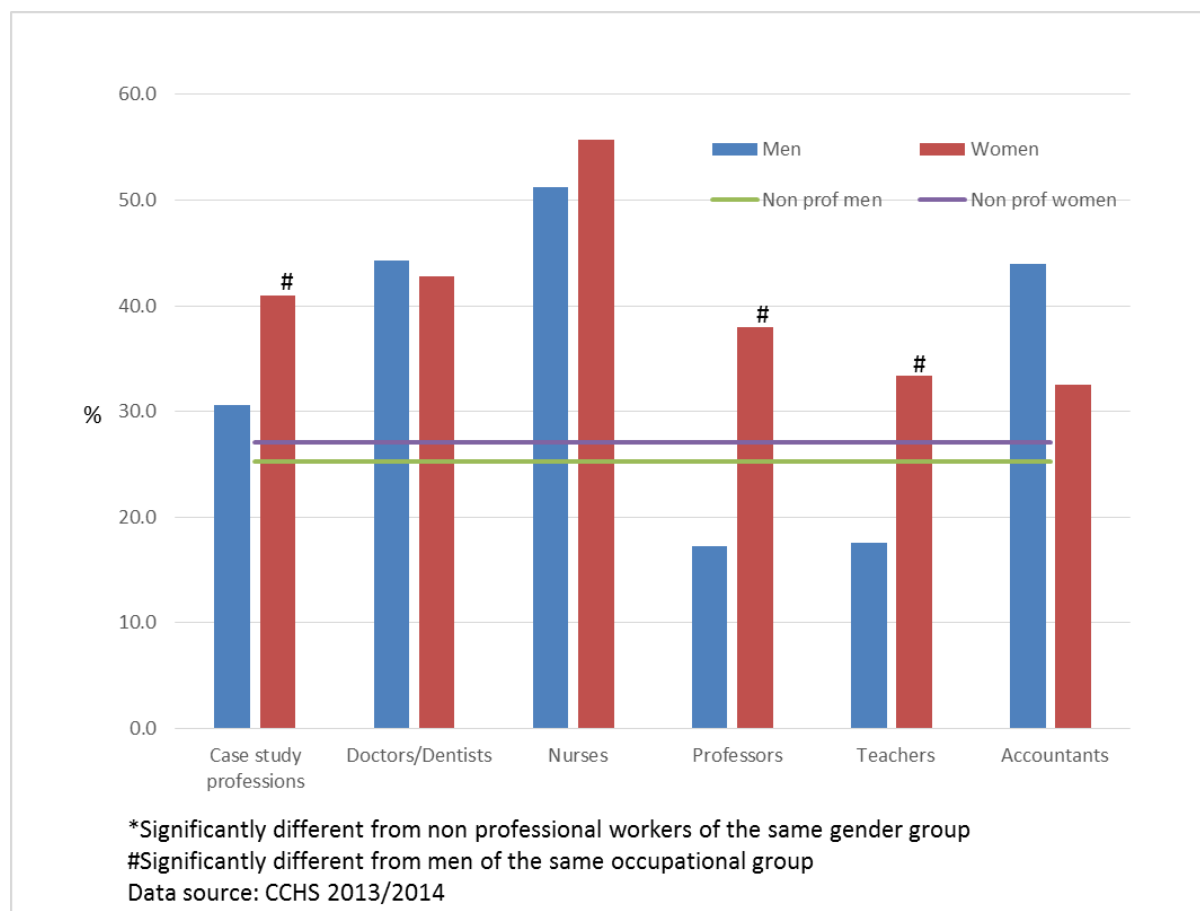


Figure 2. Among case study profession (especially teachers), women showed a higher rate of self-perceived work stress than men. No gender difference was found for non-professional workers.

Another gender differences in self-reported life and work stress to note is that CSP workers did not show gender difference in life stress, but they did show a difference in work stress; female CSP workers were more like than their male counterparts to report high work stress. For non-professional workers, significant gender differences were found in both life and work stress; female non-professional workers reported a higher level of stress than male non-professional workers.

Job satisfaction and characteristics

Shifting to data from the 2012 CCHS mental health-focused survey, it was found that both male and female CSP workers reported significantly higher levels of job satisfaction than

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

non-professional workers (see Figure 3). For both men and women, higher proportions of teachers and professors reported that they were satisfied with their jobs. Male doctors also showed higher level of job satisfaction than their non-professional counterparts. Among CSP workers, accountants reported a low score of job satisfaction. Their job satisfaction was significantly lower than that of dentists, professors, and teachers.

With respect to job characteristics, it was found that CSP workers showed higher levels of job control (indicated as lower scores of job authority and skill discretion) than non-professional workers. Male CSP workers showed a higher level of decision authority than female CSP workers. There was no gender difference in skill discretion, but accountants showed a relatively lower level of skill discretion compared to other CSP workers. Male and female accountants were not statistically different from their non-professional counterparts in skill discretion.

Overall, a higher level of psychological demands was found among female CSP workers compared to their non-professional counterparts. Male and female doctors, nurses and teachers showed higher levels of psychological demands than their non-professional counterparts. Interestingly, psychological demands reported by women professors were statistically lower than that of non-professional workers.

Compared to non-professional workers, a higher proportion of CSP workers, both men and women, reported that their job security is good. On the other hand, male CSP workers reported a lower level of physical exertion than their non-*professional* counterparts. Specifically, male doctors, professors, teachers, and accountants showed lower levels than non-professional workers. There was no difference in physical exertion between female CSP and non-professional workers. Moreover, female nurses reported a higher level of physical exertion than their non-professional counterparts. Among female CSP workers, only accountants showed a lower level of physical exertion than non-professional workers.

There were no overall differences in scores of workplace support between CSP workers and non-professional workers. Nurses, however, showed a lower level of workplace support (indicated as higher scores) than non-professional workers. Similarly, no overall differences in job strain were found between CSP workers and non-professional workers. Here too, nurses showed a higher level of job strain than non-professional workers. Male and female professors showed a lower level of job strain than non-professional workers.

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

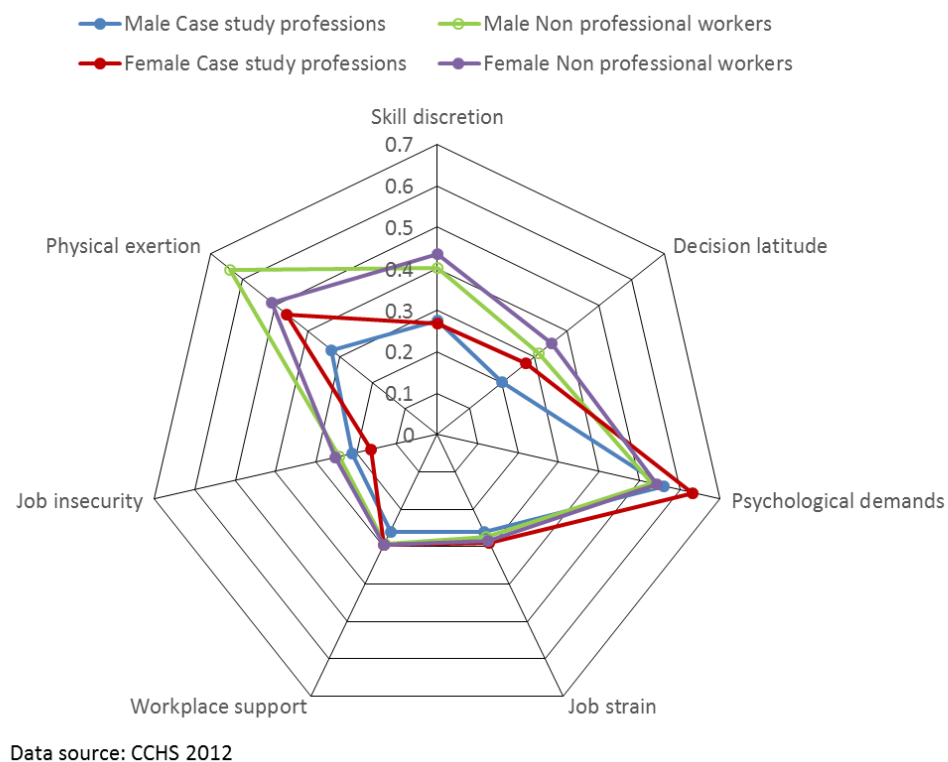


Figure 3. Compared to men, women workers in case study professions showed a higher job strain, physical exertion, and lower job authority.

Work absences

Shifting back to the 2013-2014 CCHS data, we found that work absences (i.e., the previous week) were more frequently reported among CSP workers (13%) compared to non-professional workers (7%). Also, higher rates of work absence were reported by female CSP workers (15%) compared to male workers (9%), a similar pattern as for non-professional workers (7% for women, 5% for men).

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

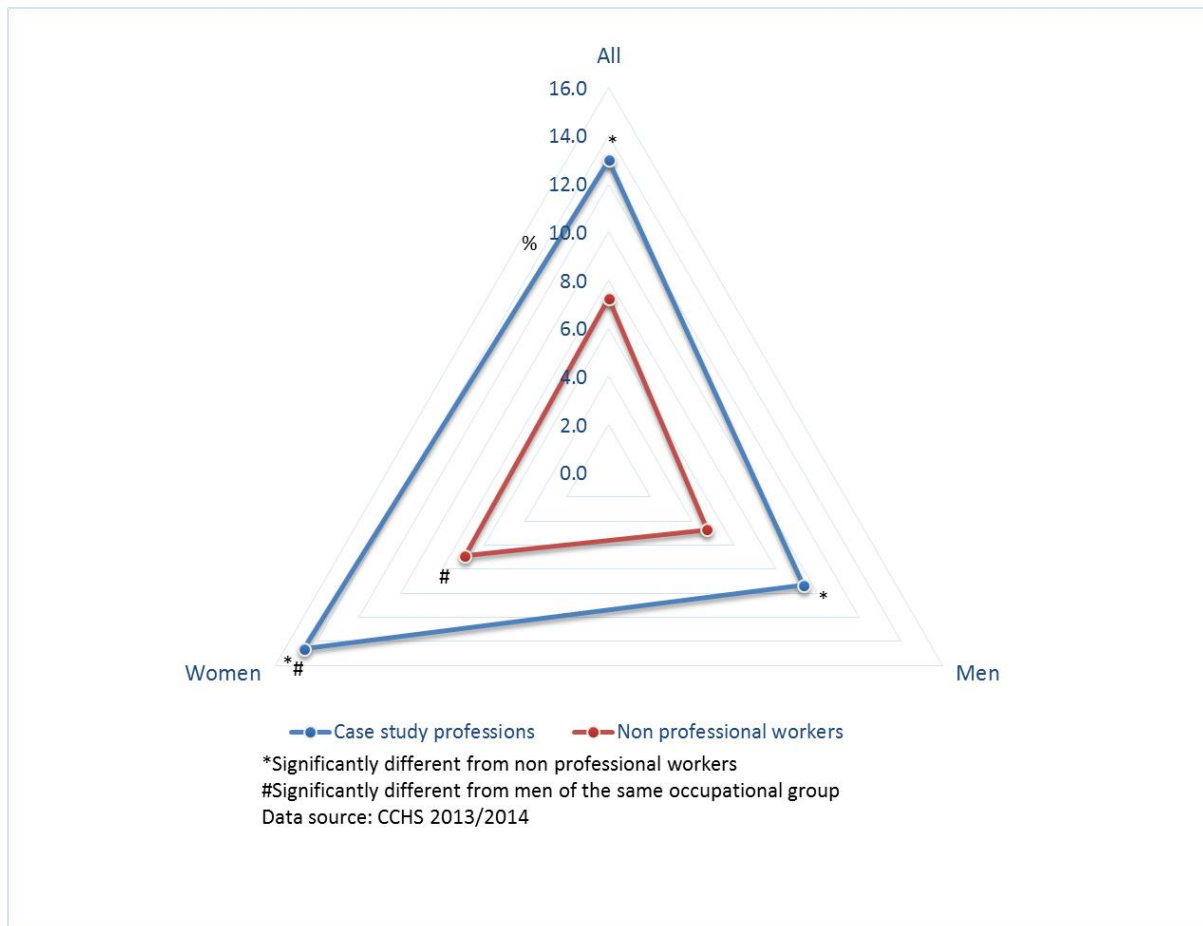


Figure 4. Higher rates of work absence (last week) were reported among CSP workers than among non-professional workers. Also, higher work absences were found in female CSP workers than male workers.

Discussion

There are two key trends to highlight from this comparative analysis that help to advance our knowledge of the nature of mental health and work experiences of a select group of professional workers, especially as it compares to 1) non-professional workers, and 2) with respect to its gender dimensions. Specifically, while the literature on mental health experiences of workers in healthcare (Ahmad et al., 2015; Hakanen et al., 2008), accounting (Kelly & Barrett, 2011; Ozkan et al., 2015), teaching (Brunsting et al., 2014; Kosir, Tement, Licardo & Habe, 2015) and academic sectors (Berg et al., 2016; Deaville 2009) brings some insights on different mental health issues they face and the adverse work-related factors that lead to these, our analysis adds two comparative dimensions across professional worker groups.

First, with respect to how our professional workers compare to non-professional workers, findings from this study suggest that accountants, academics, dentists, doctors, nurses, and teachers were more likely to report higher self-perceived health and mental health, a lower prevalence of mental disorders, and reported higher job satisfaction than non-professional

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

workers. Although our findings did not necessarily corroborate reports of a higher prevalence of mental health issues among these select professional workers, our findings do concur with the growing body of literature on the work-related sources of stress they differentially experience. Specifically, they reported higher self-perceived life and work stress than non-professional workers, and higher work absence than non-professional workers. Specifically, for our selected professions, work stress was higher in job control (skill discretion and decision authority), psychological demands, job security, and lower physical requirements than non-professional workers. The seemingly paradoxical finding of high job satisfaction yet higher stress is reflected in other studies (e.g., Skaalvik & Skaalvik 2015), though few include a comparison with non-professional workers.

Second, there were interesting trends where gender was a significant differentiator. Although all female workers were more like than their male counterparts to report high work stress, women in our selected professions reported a higher rate of self-perceived work stress, higher physical exertion, and lower decision authority than men in these professions. Women in our selected professions reported higher level of psychological demands than women non-professional workers, as well as higher rates of work absences. These findings are similar to the key trends in the literature on gender, work and stress, specifically, how women's poorer self-reported mental health is related not only to women's adverse working conditions and work environment (Attell et al., 2017, Elwér, Harryson, Bolin & Hammarström 2013; Geoffroy & Chamberland, 2015; Harnois & Bastos, 2018) but also to higher levels of life stress which could be in part to challenges in maintaining work-life balance (Bourgeault, Luce and Macdonald, 2006).

Within specific CSPs, noticeable gender differences also emerged. For example, self-perceived work stress was notably higher for female professors and teachers, which could reflect the challenges women face in a profession that tends to be structured according to a masculine work ethic (Alemán, 2014). Female nurses reported a higher level of physical exertion than their non-professional counterparts, which corroborates earlier research which has only included nurses (Mark & Smith 2012). Nurses, regardless of gender, reported lower levels of workplace support than non-professional workers, an interesting trend for further analysis.

Strengths

The strengths of this research includes its large population-based sample, which includes data on a range of job features, as well as its ability to capture different dimensions of workers' health. It also afforded a comparative dimension across professional groups and the ability to compare with non-professional workers, and the intersection of gender with professional/non-professional work—helping to address a key gap in the literature. These findings have important implications for profession and gender-specific workplace mental health promotion initiatives amongst these professional workers.

Limitations

There are some important methodological considerations to note. First, the two surveys used different versions of occupational classifications—CCHS 2013/2014 used NOC-S 2006 while CCHS 2012 (used for the measure of mental disorder and work stress) used NOC 2011. CSP workers were slightly under-represented in NOC 2011 than in NOC-S 2006 (7.8% vs. 8.3%).

Second, the reference periods used in this analysis for the health measures were also not consistent: for self-rated mental health, life stress, self-rated health, an unspecified reference period implying the present; for WMH-CIDI measured disorders, the past month, the past 12 months (used in this analysis), or lifetime; for work stress measures, the past 12 months; for self-reported mental morbidities, disorders that had lasted or were expected to last 6 months or more.

Third, due to insufficient sample sizes, this study could not examine differences in mental health disorders asked in the 2012 CCHS-MH (major depressive episode, bipolar disorder, generalized anxiety disorder, and abuse of or dependence on alcohol, cannabis or other drugs) for specific professional groups or gender groups of CSP. Instead, this study examined prevalence by gender for having *any* of the six disorders.

Fourth, since respondents included in this study were all active workers, the sample is likely biased towards healthy workers and does not capture those who are on leave or those who have health conditions preventing them from working. As such, our results likely underestimate the occurrence of mental health problems, particularly the most severe mental health problems.

Finally, it is important to note that the data are based on self-report, though the biases this may reveal applies across professional and non-professional cadres and gender. Because the analyses are in one point in time (i.e., cross-sectional), any causation between variables cannot be inferred.

Future Research

This study lays a foundational base for more focused empirical research focused on these professional workers, presently being undertaken in partnership with their national professional associations; this will enable us to delve further into the initial insights from the data analysed herein. Future research could also involve multivariate analysis of datasets with larger sample sizes to tease apart the relative influence of the different variables, such as whether some of these trends are related to full time and part time status, and worker's social identities (race, Indigenous identity, immigration status). Health and labour-market indicators, such as include job interruptions, changes in employment and income, more relevant to long-term workplace conditions would also be a promising area for future

A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

exploration. Future research could also employ a longitudinal analysis to track down the path of work-related health of individual workers in specific professions.

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The authors have no financial interest or benefit that has arisen from the direct applications of this research.

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A Gendered Analysis of Work, Stress and Mental Health, Among Professional and Non-Professional Workers

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