

Mental Health Status of Canadian Funeral Service Workers at the Beginning of the COVID-19 Pandemic

Quentin Durand-Moreau, MD and Jean-Michel Galarneau, PhD

Objective: To describe the mental health situation and job stress levels of Funeral Service Workers (FSW) during the first months of the pandemic.

Methods: We conducted a cross-sectional study in Canada between May and July 2020. Funeral service professional organizations were asked to spread a questionnaire to their members including job description, assessment of anxiety (GAD-7), depression (PHQ-8), and job stress (effort-reward imbalance questionnaire). **Results:** Fifty-eight FSW completed a questionnaire, 32% reported anxiety symptoms (GAD-7 > 10), 29% reported depressive symptoms (PHQ-8 > 10), 31% reported job stress. Women were more likely to report overcommitment (66.7% vs. 31.8%, $P=0.015$). **Conclusions:** Levels of anxiety and depression identified in Canadian FSW were higher than those identified in other occupational groups during the first few months of the pandemic.

Keywords: anxiety, COVID-19, depression, occupational groups, occupational stress

COVID-19 represents a direct occupational risk for exposed workers who may be contaminated at their workplaces. It may also provide an indirect work-related mental risk by jeopardizing working conditions, providing insecurity with insufficient protection strategies, or changing the workflows and leading to lower the quality of produced goods and services and a feeling of dissatisfaction. Ill-health consequences may include depression, anxiety, or insomnia.¹

The literature has shed a lot of light on such risks for healthcare workers, and physicians in particular.² However, healthcare workers do not account for the entirety of essential workers³ and there is a significant risk that these risks for essential workers outside of the healthcare sector could be missed, and under-assessed. Essential workers also include first responders, critical infrastructure workers,⁴ workers in the food supply chain and in the meatpacking industry,⁵ as well as Funeral Service Workers.

Van Overmeire and Bilsen have reported that Funeral Service Directors may be subject to both physical and mental health issues in the context of this pandemic.⁶ Funeral Service Workers are involved in all tasks related to the death of a person, including

embalming, organizing and conducting visitations and ceremonies, transportation of remains, operating a crematorium and all administrative, commercial or managerial aspects. It includes the jobs of Funeral Service Director and Embalmer that may require a license for practice in most provinces and territories in Canada. A summary of some occupational hazards and risks encountered by Funeral Service Workers is given in Table 1. A recent rapid review has listed changes in different steps of memorialization practices during the COVID-19 pandemic: body preparation (hygiene requirements and storage issues due to the high numbers of deaths), funeral organization (capped number of people attending funerals, live-streamed ceremonies. . .), cremation and burial (backlogs of bodies).¹¹

Although not described yet, funeral Service Workers may theoretically be at risk of work-related COVID-19 by occupational exposure to infected cadavers. Furthermore, Statistics Canada estimates that COVID-19 has caused the death of more than 8000 people between January and May 2020: the provinces of British Columbia, Alberta, Ontario, and Quebec have all recorded some degree of excess mortality since the WHO declared COVID-19 a pandemic on March 11, 2020.¹² This implies an increased workload for Funeral Service Workers and degraded working conditions that may be responsible for mental health issues.

We conducted a national study with Funeral Service Workers in Canada. Our objectives are to describe the impact of getting COVID-19 on the mental health and job stress of Funeral Service Workers, and to describe depressive and anxiety symptoms and job stress levels for all Funeral Service Workers during the first months of the pandemic.

MATERIALS AND METHODS

We conducted a study in Canada between May 15, 2020 and July 31, 2020. We contacted federal and provincial Funeral Service professional associations and colleges offering training programs for Funeral Service Directors and Embalmers (Supplementary Table I, <http://links.lww.com/JOM/A896>). We sent one request and two follow-ups to each of the organizations, for them to spread the link to the online self-administered questionnaire to their members. The researchers had no direct access to a directory of email addresses of Funeral Service Workers. Requests were sent by e-mails written in French for institutions located in Québec, and in English for all other provinces. A specialized magazine for Funeral Service Professionals in Canada (*The Funeral Chronicle*), edited in paper version only, has published an article about our research project and invited professionals to participate in the research. As individuals may have been reached several times through different associations and organizations about the study, we checked for potential duplicates by reviewing identical responses. Respondents were able to fill a questionnaire either in English or in French. It comprised four sections:

1. **Job Description and Sociodemographics.** We collected information from the participants on gender, age, location of practice, years of experience in the field of Funeral Services, working time, and additional working activities. The main job tasks have been listed with the expertise of the director of a Funeral Service association. Respondents were asked whether they were doing any of the following tasks: embalming, organizing/conducting visitation, organizing/conducting funeral ceremonies,

From the Division of Preventive Medicine, Department of Medicine, Faculty of Medicine and Dentistry, University of Alberta, Edmonton AB, Canada (Dr Durand-Moreau and Dr Galarneau).

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The authors report no conflicts of interest.

Clinical significance: Funeral Service Workers are essential workers with modified working conditions due to the COVID-19 pandemic, experiencing high levels of anxiety, depressive symptoms, job stress, and overcommitment, that require further surveillance and research.

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Address correspondence to: Quentin Durand-Moreau, MD, Division of Preventive Medicine, Department of Medicine, Faculty of Medicine and Dentistry, University of Alberta, 5-30 University Terrace, 8303-112 Street, Edmonton, AB, Canada, T6G 2T4 (durandmo@ualberta.ca).

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TABLE 1. Occupational Hazards and Risks Described for Funeral Service Workers

	Hazards	Risks
Physical ⁷	Implanted medical devices	Work injuries
Chemical ⁸	Formaldehyde, latex	Allergies and irritations
Biological ⁹	Bacteria: <i>Staphylococcus aureus</i> , <i>Streptococcus pyogenes</i> , non-typhi <i>Salmonella</i> , <i>Mycobacterium tuberculosis</i>	Infectious diseases, including tuberculosis
	Viruses: Hepatitis A, B, C, Human Immunodeficiency Virus, SARS-CoV	
	Prions (responsible for Creutzfeldt-Jakob disease)	
Ergonomic ⁷	Manual handling, heavy loads and risk of slips and falls	Musculoskeletal Disorders and trauma
Organizational ¹⁰	Exposure to critical incidents (eg, sudden infant death, death in unnatural circumstances), work in isolation, working with remains	Mental symptoms and diseases including depression and anxiety

transporting remains, operating a crematorium, organizing/conducting burial ceremonies, administrative activities, commercial activities, management activities, or other activities (listed by the participant with free text). They were asked whether they held a license as Funeral Director and/or Embalmer, the total number of employees in their company, and their work status (permanent, temporary employee, or non-employed). Provinces and territories were dichotomized in two groups, based on provincial COVID-19 statistics available during data collection: excess mortality provinces (Alberta, British Columbia, Ontario, and Québec) and no excess mortality provinces and territories (all other provinces and territories).

- Health and COVID-19.** collecting self-reported information about symptoms and diagnosis of COVID-19, date of symptoms, self-reported opinion on the work-relatedness, submission of a claim to a Workers' Compensation Board.
- Mental Health.** The GAD-7 and PHQ-8 scales have been provided to screen for anxiety and depression. The GAD-7 score ranges from 0 to 21, scores of 5, 10, and 15 represent cut points for mild, moderate and severe anxiety, respectively.¹³ The PHQ-8 score ranges from 0 to 24; scores of 5, 10, 15, and 20 represent cut points for mild, moderate, moderately severe and severe depression, respectively.¹⁴
- Work-related stress.** The short version of the Effort-Reward Imbalance (ERI) questionnaire designed by Siegrist has been provided. It comprises three subscales (effort, scored from 3 to 12; Reward scored from 7 to 28; and overcommitment scored from 6 to 24). The effort-reward ratio (ER) is calculated with the following formula (E is the effort score and R is the reward score):

$$ER = E / (R \times (3/6))$$

An ER score lesser than 1 indicates that there are less efforts for each reward, an ER score that equals 1 indicates that there is one effort for one reward, and an ER score greater than 1 indicates that there are more efforts for each reward.¹⁵ We dichotomized the overcommitment score at the median to create two groups (low overcommitment and high overcommitment).

An automated calculation of the GAD-7 and PHQ-9 scores was provided to the respondents after completion of the questionnaire. A GAD-7 score greater than 7 suggested anxiety and a PHQ-8 score suggested depression; in both cases, respondents were advised, recommended to meet their Family Physician or a Psychologist, and could click a link towards the mental health support webpage from the Government of Canada, in French or in English. All of the scales used (GAD-7, PHQ-8, and ERI) have been validated both in English and in French.

Statistical Analysis

An examination of the variables including confounders was made by sex. Means were compared using the Wilcoxon

rank-sum test (Mann-Whitney) and proportions compared using Fisher's exact test. Kendall's rank correlation was used to examine the relation between GAD-7 and other continuous explanatory variables. Statistics were calculated using Stata, version 14.2.

Ethics

This research project has been approved by the Ethics Committee of the University of Alberta (Pro00100671).

RESULTS

Fifty-eight Funeral Service Workers have completed a questionnaire. Job characteristics and sociodemographic data are reported in Table 2. None of them self-described as non-binary, and none reported working in any of the three territories (Yukon, Nunavut, Northwest Territories) nor from Nova Scotia and Newfoundland and Labrador. Fifteen women (42.9%) and six men (26.1%) were working in one of the excess mortality provinces. There was no statistically significant difference in gender distribution between excess and no excess mortality provinces (Table 2, $P = 0.256$). Fifty-four (94.7%) respondents reported working full-time in Funeral Services; and eight (13.8%) reported additional paid activities outside of Funeral Services. Twenty-nine respondents (50.1%) were working in a company of more than 10 employees; 12 (21.1%) in a company of 6 to 10 employees; 15 (26.3%) in a company of 2 to 5 employees and 1 (1.8%) was working alone. Forty-nine respondents (86.0%) were permanent employees (10.5%) were not employed (ie, directors or business owners), and 2 (3.5%) had other working statuses (temporary worker and intern). Having managerial duties was positively associated with age ($P = 0.020$) and with number of years of experience in the field of funeral service ($P = 0.0001$), and was negatively associated with being a woman ($P = 0.0001$).

COVID-19 Status

Six (10.3%) of the respondents reported that they think they have, or they had COVID-19 (4 women and 2 men). None have reported having this diagnosis been confirmed by a physician or having tested positive for COVID-19 with a swab test. None have submitted a claim to a Workers' Compensation Board. Of the six persons thinking they could have COVID-19, four of them came from an excess mortality province, and two from a no excess mortality province ($P = 0.118$).

Mental Health

Table 3 shows the anxiety levels assessed by the GAD-7, and the depression levels assessed by the PHQ-8, per gender. Of the 21 persons coming from an excess mortality province, 15 (71.4%) reported any anxiety symptoms (mild to severe), and 15 (71.4%) reported any depressive symptoms (mild to severe); whereas of the

TABLE 2. Job Characteristics of the Respondents

	Women	Men	Total	
Number, %	35 (60.3%)	23 (39.7%)	58 (100%)	
Mean age (years)	36.1	49.5	41.4	<i>P</i> = 0.0001
Mean experience in the field (years)	8.1	23.1	14.1	<i>P</i> = 0.0001
Province of work				<i>P</i> = 0.256
No excess mortality provinces	20 (57.1%)	17 (73.9%)	37 (63.8%)	
Saskatchewan	11 (31.4%)	8 (34.8%)	19 (32.8%)	
Manitoba	8 (22.9%)	8 (34.78%)	16 (27.6%)	
Other provinces	1 (2.9%)	1 (4.3%)	2 (3.5%)	
Excess mortality provinces	15 (42.9%)	6 (26.1%)	21 (36.2%)	
Quebec	8 (22.9%)	3 (13.0%)	11 (19.0%)	
Alberta	2 (5.7%)	3 (13.0%)	5 (8.6%)	
Ontario	3 (8.6%)	0 (0.0%)	3 (5.2%)	
British Columbia	2 (5.7%)	0 (0.0%)	2 (3.5%)	
Tasks undertaken				
Embalming	21 (60.0%)	12 (52.2%)	33 (56.9%)	<i>P</i> = 0.597
Organizing/conducting visitation	27 (77.1%)	16 (69.6%)	43 (74.1%)	<i>P</i> = 0.553
Organizing/conducting funeral ceremonies	25 (71.4%)	17 (73.9%)	42 (72.4%)	<i>P</i> = 1.000
Transporting remains	23 (65.7%)	16 (69.6%)	39 (67.2%)	<i>P</i> = 1.000
Operating a crematorium	6 (17.1%)	3 (13.0%)	9 (15.5%)	<i>P</i> = 1.000
Organizing/conducting burial ceremonies	22 (62.9%)	16 (69.6%)	38 (65.5%)	<i>P</i> = 0.779
Administrative activities	30 (85.7%)	15 (65.2%)	45 (77.6%)	<i>P</i> = 0.107
Commercial activities	6 (17.1%)	7 (30.4%)	13 (22.4%)	<i>P</i> = 0.336
Management activities	7 (20.0%)	13 (56.5%)	20 (34.5%)	<i>P</i> = 0.006
Other activities*	3 (8.6%)	4 (17.4%)	7 (12.1%)	<i>P</i> = 0.418
Licensed as a Funeral Director	26 (74.3%)	21 (91.3%)	47 (81.0%)	<i>P</i> = 0.172
Licensed as an Embalmer	27 (77.1%)	21 (91.3%)	48 (82.8%)	<i>P</i> = 0.287
No license	5 (14.3%)	1 (4.3%)	6 (10.3%)	<i>P</i> = 0.386

*Other activities mentioned were for instance organization of conferences, cleaning tasks, or casketing.

35 persons coming from a no excess mortality province, 20 (57.1%) reported any anxiety symptoms and 20 (57.1%) reported any depressive symptoms. The difference between both groups of provinces was not statistically significant for anxiety symptoms (*P* = 0.427) nor for depressive symptoms (*P* = 0.291). Levels of anxiety and depression were not statistically different between Funeral Service Workers having managerial activities or not: 65.0% (*n* = 13) of those having managerial activities versus 61.1% (*n* = 22) of the others experienced mild to severe anxiety

symptoms (*P* = 0.712); 45.0% (*n* = 9) of those having managerial activities versus 58.3% (*n* = 21) of the others experienced mild to severe depressive symptoms (*P* = 0.579). Respondents thinking that they may have had COVID-19 had no statistically significant different levels of anxiety or depression than those who did not think they had COVID-19 (*P* = 0.915). GAD-7 scores were negatively associated with years of experience (*P* < 0.005) and age (*P* < 0.001) while being positively associated with overcommitment scores (*P* < 0.001).

TABLE 3. Anxiety and Depression Levels by Gender

	Women	Men	Total	
Anxiety levels (GAD-7)				<i>P</i> = 0.003
None (GAD-7 < 5)	7 (21.1%)	14 (60.9%)	21 (37.5%)	
Mild (GAD-7 ⁵⁻⁹)	10 (30.3%)	7 (30.4%)	17 (30.4%)	
Moderate (GAD-7 ¹⁰⁻¹⁴)	8 (24.2%)	2 (8.7%)	10 (17.9%)	
Severe (GAD-7 ¹⁵⁻²¹)	8 (24.2%)	0 (0.0%)	8 (14.3%)	
Depression levels (PHQ-8)				<i>P</i> = 0.057
None (PHQ-8 < 5)	10 (30.3%)	16 (69.6%)	26 (46.4%)	
Mild (PHQ-8 ⁵⁻⁹)	11 (33.3%)	3 (13.0%)	14 (25.0%)	
Moderate (PHQ-8 ¹⁰⁻¹⁴)	6 (18.2%)	2 (8.7%)	8 (14.3%)	
Moderately severe (PHQ-8 ¹⁵⁻¹⁹)	4 (12.1%)	2 (8.7%)	6 (10.7%)	
Severe (PHQ-8 ²⁰⁻²⁴)	2 (6.1%)	0 (0.0%)	2 (3.6%)	
Impact of depressive symptoms on functioning*				<i>P</i> = 0.098
Not difficult	12 (36.4%)	15 (65.2%)	27 (48.2%)	
Somewhat difficult	17 (51.5%)	8 (34.8%)	25 (44.6%)	
Very difficult	2 (6.1%)	0 (0.0%)	2 (3.6%)	
Extremely difficult	2 (6.1%)	0 (0.0%)	2 (3.6%)	

*This has been assessed with the separate question at the end of the PHQ-8 questionnaire: "If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?"

TABLE 4. Effort-Reward Ratio and Overcommitment by Gender

	Women	Men	Total
ER			<i>P</i> = 0.694
ER < 1 (less efforts than rewards)	21 (63.7%)	15 (68.2%)	36 (65.5%)
ER = 1 (efforts equal rewards)	2 (6.1%)	0 (0.0%)	2 (3.6%)
ER > 1 (more efforts than rewards)	10 (30.3%)	7 (31.8%)	17 (30.9%)
OC			<i>P</i> = 0.015
Low overcommitment	11 (33.3%)	15 (68.2%)	26 (47.2%)
High overcommitment	22 (66.7%)	7 (31.8%)	29 (52.7%)

ER, effort-reward ratio; OC, overcommitment.

Job Stress

Table 4 reports the Effort-Reward ratio, assessed with the Effort-Reward Imbalance model, by gender. Respondents having ER > 1 (more efforts than rewards) had higher levels of severe anxiety (GAD-7¹⁵⁻²¹) than those having ER < 1 (29.4% vs. 8.3%, *P* = 0.03). There were no statistically significant differences in depression levels regarding ER: 12 of the respondents with ER > 1 experienced mild to severe depressive symptoms (70.6%), versus 1 of those with ER = 1 (50.0%) and 17 of those with ER < 1 (47.2%) (*P* = 0.163). Levels of anxiety were lower for Funeral Service Workers with a low overcommitment score: 50.0% of the respondents with a low overcommitment score (13 persons) had no anxiety symptoms (GAD-7 < 5) versus 24.1% of those having a high overcommitment score (7 persons) (*P* = 0.005). Levels of depression were also lower for Funeral Service Workers with a low overcommitment score: 57.7% of the respondents with a low overcommitment score (15 persons) had no depression symptoms (PHQ-8 < 5) versus 34.5% of those with a high overcommitment score (10 persons) (*P* = 0.038). Between excess and no excess mortality provinces, there were no statistically significant differences in terms of ER ratio (7 [33.3%] of those living in an excess mortality province vs. 10 [29.4%] had ER > 1, *P* = 0.782), nor overcommitment levels (13 [61.9%] of those living in an excess mortality province vs. 16 [47.1%] had high overcommitment, *P* = 0.405). Between Funeral Service Workers undertaking management tasks and those who do not, as well, there were no statistically significant differences in terms of ER ratio (7 [36.8%] of those having managerial duties vs. 10 [27.8%] had ER > 1, *P* = 0.515) nor overcommitment levels (10 [52.6%] of those having managerial duties vs. 19 [52.8%] of the others had high overcommitment, *P* = 0.607).

DISCUSSION

We identified six individuals reporting that they thought they had COVID-19. However, none of these has been reported to be a confirmed case. Thus, we cannot draw any conclusion on our primary objective, which was to describe the specific impact of COVID-19 on mental health and stress at the workplace in our population of Funeral Service Workers.

In our population, 32% of the respondents reported moderate or severe anxiety symptoms, 29% reported moderate to severe depressive symptoms.

A study on 104 Funeral Directors and employees in Funeral Homes in Belgium has been recently published.¹⁶ The authors used the professional quality of life-scale 5 (PROQOL-5), which includes a burnout scale, a compassion satisfaction scale, and a scale

measuring secondary trauma. Between April and June 2020, levels of burnout increased whereas compassion satisfaction and secondary trauma levels decreased. However, the authors did not assess levels of depression or anxiety in their study. Thus, we will compare our numbers with some existing studies conducted during the same period (the first months of the COVID-19 pandemic) and using similar tools and thresholds as we used to assess for anxiety (GAD-7) or depression (PHQ-2, PHQ-8, or PHQ-9). In the general population, surveys have shown rates of 14% and 19%, respectively for anxiety and depression in Hong-Kong,¹⁷ and 20% and 23% in Ireland.¹⁸ A study on the general population having access to a mental health text messaging support service in Alberta (Canada) showed that 47% reported anxiety, and 44% reported depressive symptoms.¹⁹

Levels of anxiety and depressive symptoms have been assessed during the first few months of the pandemic in various occupational groups such as healthcare workers in the United States (22% of anxiety, 16% of depression),²⁰ or in Saudi Arabia (11% of anxiety)²¹; teachers from the Henan province in China (14% of anxiety)²²; dental practitioners in Northern Italy (24% of anxiety)²³; general practitioners in Italy (22.9% of depressive symptoms).²⁴

Overall, our levels are below those reported on a self-selected population having access to a mental health support service, and above those on the general population. Funeral Service Workers seem to report quite high anxiety and depressive symptoms levels compared to other professions.

In our study, 31% of the Funeral Service Workers reported an effort-reward imbalance with more efforts than rewards. Although job stress has been assessed using various tools in the literature on different working populations since the beginning of the pandemic, we identified only one Italian cross-sectional study on healthcare workers using the Effort-Reward Imbalance model.²⁵ These data showed that about one in three workers experienced distress, with no statistical significant difference according to the workers' own COVID-19 status. This is consistent with our own findings.

Women were significantly younger and, logically, less experienced in the field. Our univariate analysis showed that they were fewer to report holding managerial activities. Women were also experiencing higher levels of anxiety and overcommitment. Our univariate analysis showed that being a man, the age and longer experience in the field were associated with lower levels of anxiety.

The association between high anxiety levels and overcommitment we identified with Funeral Service Workers is consistent with several publications with cross-sectional designs on other working populations, such as Italian radiologists,²⁶ German students,²⁷ Israeli accountant interns,²⁸ or in a random sample of French workers.²⁹ However, we did not find any longitudinal design that would help determine the causality relationship between overcommitment and anxiety.

This study has a considerable limitation which is the small sample. We wanted to run this study in a short time frame to obtain a baseline in terms on mental health and work-stress of Funeral Service Workers at the beginning of the pandemic. Although we got in touch with 19 professional associations and training centers with sending several reminders and had been interviewed in a specialized journal about the study, we did not obtain a direct access to any email directory of Funeral Service Workers. This has added hurdles to spread the study, as we had to rely on the willingness of all actors to spread the information about the survey directly to Funeral Service Workers. In addition, we were not able to calculate the response rate: the questionnaire has been spread to members of associations (more likely to be business owners) to be spread to all of their employees, not necessarily members of any association. Some individuals may belong to both a provincial and the federal association. Training school have also been asked to reach their alumni. This came in addition to other factors such as

survey fatigue. It is also possible that our survey came at a moment of increased workload for these professional, which has deferred them from filling up the questionnaire. It also raises the question of the efficacy of research according to the promoter: in our study, the Funeral Service Workers were not in demand of a study; the project was the initial idea of the research team. It is possible that the response rate is higher when professional corporations are initiating the research. The pandemic context and the restrictions in vigor at the time we built the protocol did not allow us to physically meet the professional and visit their workplaces. Our numbers show a large discrepancy about response rates between provinces. It appears that the two provinces with the highest number of respondents (Saskatchewan and Manitoba) were those with provincial associations that explicitly confirmed by email forwarding the information to the study to their members. This illustrates the need to have a high level of involvement of the professionals to obtain a significant number of participants.

This study describes the mental health status of a particular subset of essential workers. It is critical to expanding our vision of essential workers, which should not be restricted to healthcare workers only, either in research or in clinical settings, such as funeral service workers or meatpacking workers.⁵ Further studies on such workers are required to help characterize how their health is affected during the COVID-19 pandemic.

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