Original quantitative research

Trials and tribulations among members of Canada's Defence Team early in the pandemic: key insights from the COVID-19 Defence Team Survey

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Abstract

Introduction: Due to the unprecedented impact of COVID-19, there is a need for research assessing pandemic-related challenges and stressors. The current study aimed to assess key concerns and general well-being among members of Canada's Defence Team, including Canadian Armed Forces personnel and members of the Department of National Defence (DND) Public Service.

Methods: The COVID-19 Defence Team Survey was administered electronically to Defence Team staff in April and May of 2020 and was completed by 13 688 Regular Force, 5985 Reserve Force and 7487 civilian DND Public Service personnel. Along with demographic information, the survey included assessments of work arrangement, pandemic-related concerns, general well-being and social and organizational support. Weighted data (to ensure representation) were used in all analyses.

Results: The majority of respondents were working from home, with a small minority unable to work due to restrictions. Though many concerns were endorsed by a substantial proportion of respondents, the most prevalent concerns were related to the health and well-being of loved ones. The majority of respondents reported their partner, family, supervisors, friends, colleagues and children provided general support. Half of the civilian defence staff and one-third of military respondents reported a decline in mental health. Women, younger respondents, those with dependents and, in some cases, those who were single without children were at risk of lower well-being.

Conclusion: The pandemic has negatively impacted a substantial portion of the Defence Team. When responding to future crises, it is recommended that leaders of organizations provide additional supports to higher-risk groups and to supervisors who are ideally positioned to support employees during challenging times.

Introduction

Since being declared on 11 March 2020, the COVID-19 pandemic has substantially altered the way individuals both live and work, requiring organizations and personnel to rapidly adapt. In the final week of March 2020, a reported 2.8 million Canadians were away from their jobs for reasons related to the pandemic, and those who continued to work were adapting to working from home.[1] Similarly, within the Department of National Defence (DND) and the Canadian Armed Forces (CAF), which make up Canada's Defence Team, many individuals were required to engage in telework or alternative work arrangements at levels not previously experienced, with minimal time to prepare or acclimatize. Moreover, personnel faced significant new stressors in their personal lives, including concerns over

Highlights

- Top concerns reported by all groups centred on the health and well-being of loved ones, with civilian Defence Team personnel reporting higher levels of concern compared to Regular and Reserve Force personnel.
- Over 75% of all participants agreed that their spouse/partner provided them with significant support. Family members, supervisors and friends were also commonly perceived as providing significant support (57%–66%).
- A decline in mental health was reported by almost half of civilian Defence Team personnel and approximately one-third of military personnel.
- Women, younger respondents and those with dependents appear to be at risk for lower levels of well-being during the pandemic.

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the health and welfare of their families, and the care of those around them.

The unprecedented social and economic impacts of the COVID-19 pandemic fuelled an extraordinary demand for real-time, high-quality data on Canada's people, society and economy. In light of this demand, many organizations (e.g. Statistics Canada, the Canadian Institutes of Health Research and a number of federal departments and agencies)[1-4] accelerated data collection and the dissemination of insights on the impacts of COVID-19 on individuals and organizations. Accordingly, the COVID-19 Defence Team Survey was administered to military personnel and civilian public service employees within the DND/CAF to better understand Defence Team members' experiences and needs related to the pandemic, and to provide key insights that might enable the DND/CAF to implement timely measures to address the concerns of personnel and identify potential areas of future concern.

Past research has shed light on the impact of disease outbreaks on individuals' lives, and on the segments of the population that are particularly affected, such as women or people with dependent children.[5,6] However, these observations may not generalize to the current context, given the unique nature of the COVID-19 pandemic. An exploratory analysis of the COVID-19 Defence Team Survey was therefore conducted to identify some of the top challenges that Defence Team personnel faced in various domains of their lives (e.g. work, family, health and well-being) in the early months of the pandemic, and to identify particular sociodemographic groups within the workforce who may be at risk when facing such challenges.

Methods

The anonymous, cross-sectional COVID-19 Defence Team Survey was administered electronically from 29 April to 22 May 2020 and was made available to Defence Team personnel through an internet link that was promoted and shared in Defence Team newsletters, and on websites, social media and other applications. Participation was voluntary, with informed consent obtained by having participants review an information sheet before proceeding with the survey. Participants could complete the survey in either French or English. All survey materials and procedures were approved by the DND Social Science Research Review Board (SSRRB #895/20F).

Participants

Over 27 000 Defence Team personnel completed the survey, including 13 688 Regular Force, 5052 members of the Primary Reserve* and 7487 DND Public Service personnel.[†]

The survey reached the desired population. The sample was also generally representative across key demographic variables, including gender, age and first official language, when compared to information contained in human resources records, although there was an underrepresentation of non-commissioned members (NCMs). It was not possible to calculate a response rate because probability sampling was not used and there were no means to track the number of Defence Team members who received the survey link.

A summary of participants' basic demographic characteristics is provided in Table 1. In addition (results not shown), the majority (95%) of DND Public Service personnel were indeterminate (permanent) employees. Regular Force personnel and Primary Reserve personnel were predominantly NCMs, as opposed to officers (Regular Force: 49% junior NCM, 24% senior NCM, 15% junior officer, 13% senior officer; Primary Reserve: 61% junior NCM, 17% senior NCM, 14% junior officer, 8% senior officer). Participants were from across Canada and working at varying levels within the reporting structure. Roughly half of Regular Force (53%), two-fifths of Primary Reserve (42%) and one-third of DND Public Service (31%)

personnel indicated that they supervised personnel.

Measures

The survey was developed based on existing surveys and approaches, as well as discussions with key stakeholders within the DND/CAF. Over 70 questions were included to examine a wide range of themes (e.g. work arrangement, financial concerns, well-being); however, only measures used in the present analyses are presented here.

Personal characteristics

Information was collected on a wide range of demographic and work characteristics. However, only gender, age group, status regarding the supervision of personnel and family status were considered in the present analyses, as similar variables have been linked with psychosocial impacts in past outbreaks.[5,6] Family status was assessed based on participants' marital status (single—never married; separated/divorced or widowed; married/common-law) and whether they had any dependent children under the age of 18 years living in their household part-time or full-time. This resulted in four categories: single (including separated/divorced or widowed)—no dependent children; single (including separated/divorced or widowed)—dependent children; married/common-law—no dependent children; and married/common-law—dependent children.

Work context

To provide a general overview of the work context, participants were asked to identify their primary work arrangement as of 14 March 2020 (e.g. working from home; working at my usual location; not working—tasks cannot be performed from home; not working—no network access; not working—COVID-19 related reasons; not working—reasons unrelated to COVID-19 [e.g. parental leave, seasonal job, illness or disability other than COVID-19, caring for children or elderly relatives unrelated to COVID-19]; other).

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* Only Primary Reserve members of the Reserve Force were included in this analysis, although a total of 5985 Reserve Force personnel completed the survey. Primary Reserve members serve full- or part-time on short-term contracts, and may volunteer in domestic or international operations. Other components of the Reserve Force include the Supplementary Reserve (who are inactive members of the CAF who can serve when requested), the Cadet Organizations Administration and Training Service (who train members of the Canadian Cadet Organizations and Junior Canadian Rangers), and the Canadian Rangers (who survey and patrol Canada's arctic and remote areas). Due to the unique nature of Reserve Force respondents who are not in the Primary Reserve, their results will be reported separately.

† Regular Force, Primary Reserve and DND Public Service personnel were treated as distinct groups throughout the paper, in light of important differences across the groups. In particular, military personnel may distinguish themselves from DND Public Service personnel, who are generally civilian, owing to their training and the high-risk nature of their occupation. There are also important differences among military personnel groups; notably, Primary Reserve personnel may also hold civilian employment and are not necessarily eligible for the same services and benefits as Regular Force members. Furthermore, the demographic profile of each group differs in important ways, with a more even gender distribution among DND Public Service personnel compared to the military groups, and a generally younger age among Primary Reserve personnel compared to Regular Force personnel.

Characteristic	Regular Force	Primary Reserve	DND Public Service
Gender			
Men	82.0	80.1	49.7
Women	16.8	18.9	49.6
Gender diverse	0.2	0.2	0.2
Prefer not to say	1.0	0.7	0.5
Age (years)			
Up to 24	12.1	32.5	2.0
25–34	34.6	27.3	11.6
35–44	30.2	15.4	23.5
45–54	18.7	16.4	32.9
55 and over	4.4	8.3	29.9
First official language			
English	69.0	78.0	69.2
French	31.0	22.0	30.8

Abbreviation: DND, Department of National Defence.

Pandemic-related concerns

Participants reported their degree of concern ("not at all", "somewhat", "very" or "extremely concerned"; not applicable) with 31 items in the context of the pandemic. Items were generated based on existing measures (e.g. Walter Reed Army Institute of Research [WRAIR] Behavioral Health Advisory Team – COVID-19 Assessment,[7] Canadian Perspectives Survey Series [CPSS]) and reflected a range of potential challenges. These touched on multiple domains of life, including health (e.g. "Contracting COVID-19"), family (e.g. "Family stress due to confinement") and work (e.g. "Increase in my work volume"). The total number of items participants reported as very or extremely concerning was calculated, producing an overall indicator of pandemic-related concerns.

Well-being

The approach used in the CPSS[3] to assess the health impacts of COVID-19 on Canadians was adapted by asking participants to rate their current mental health compared to before the start of the pandemic on a 5-point scale ("significantly worse", "slightly worse", "the same", "slightly better" or "significantly better"). In addition, participants were asked to indicate the extent to which "feeling lonely" and "feeling emotionally drained" had bothered them over the last two weeks on a 4-point scale ("not at all", "several days", "more than half the days" or "nearly every day").

Support

Participants' access to various sources of support was assessed by asking them to indicate if they had received significant levels of support from various individuals since the start of the pandemic (e.g. spouse/partner, friends and acquaintances, supervisor). The type of support received was not specified in this question. Perceptions regarding the level of support received from the immediate supervisor were also assessed using items adapted from a number of other sources (e.g. WRAIR Behavioral Health Advisory Team – COVID-19 Assessment,[7] Royal Ottawa Hospital COVID-19 Survey[8]). Specifically, participants used a 6-point scale ("strongly disagree", "disagree", "somewhat disagree", "somewhat agree", "agree" or "strongly agree"; not applicable) to indicate the extent to which they agreed with seven statements about their supervisor (e.g. "Emphasizes taking care of ourselves mentally/physically during the COVID-19 pandemic"). Items demonstrated very high internal reliability (Cronbach's alphas ranging from 0.93 to 0.95 across the three Defence Team groups); thus, mean scores were generated by calculating the mean of ratings across the seven items.

Analysis

To ensure results were representative of the three major groups (i.e. Regular Force, Primary Reserve and DND Public Service), data were weighted to correct for demographic differences, or misrepresentation, between the sample and the population (e.g. underrepresentation of NCMs). Specifically, the data were weighted by the following variables: organizational division within the DND/CAF, first official language, sex, rank (for military personnel) and employment status (for civilian personnel).

Given the unique context and demographic profiles of each of the three groups, analyses were presented separately for Regular Force, Primary Reserve and DND Public Service personnel (although statistical differences between the groups were not tested). Past findings indicate that not all people are impacted to the same extent during crises (e.g. there may be greater impacts among children, older adults and those who may be socially or medically vulnerable[9]). Differences across subgroups (i.e. gender, age, status regarding the supervision of personnel and family status) were therefore investigated using unadjusted logistic regression (for binary variables, e.g. worse mental health), Poisson regression (for count variables, e.g. number of pandemic-related concerns) or linear regression (for continuous variables, e.g. supervisor support) analyses.

Results

Work context

As a result of physical distancing measures, drastic changes were made to work arrangements across the Defence Team. Accordingly, only approximately one-quarter of the military members (27% Regular Force and 23% Primary Reserve) and 14% of DND Public Service personnel were working at their usual work location. Approximately half of the military members (49% Regular Force and 52% Primary Reserve) and 70% of DND Public Service personnel were working from home (part-time, full-time or flex-time). As well, 15%, 11% and 8% of Regular Force, Primary Reserve and DND Public Service personnel, respectively, reported not working

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† Only a small proportion of participants reported the other work arrangements (i.e. not working—no network access, not working—COVID-19-related reasons, not working—reasons unrelated to COVID-19, other); results are not reported.

because their tasks could not be performed from home.[‡]

Further analyses revealed that women in the Regular Force had higher odds of working at their usual location than men (odds ratio $[OR]_{woman}$ = 1.76; 95% confidence interval [CI]: 1.54–2.01), which may reflect their overrepresentation in occupations that are deemed essential, such as health care or service delivery. No such differences were observed among Primary Reserve or DND Public Service personnel. Older age groups also generally had higher odds of working at their usual location relative to those aged 24 years and under (Regular Force: $OR_{25\text{-}34yrs}$ = 2.65 [2.19–3.21], $OR_{35\text{-}44yrs}$ = 2.41 [1.99–2.93], $OR_{45\text{-}54yrs}$ = 2.51 [2.06–3.07], OR_{55+yrs} = 2.20 [1.68–2.87]; Primary Reserve: $OR_{25\text{-}34yrs}$ = 1.36 [1.12–1.64], $OR_{35\text{-}44yrs}$ = 1.55 [1.25–1.94], $OR_{45\text{-}54yrs}$ = 1.86 [1.50–2.29], OR_{55+yrs} = 2.28 [1.72–3.02]; DND Public Service: OR_{55+yrs} = 2.12 [1.08–4.16]). This was also the case for participants who supervise personnel compared to those who do not (Regular Force: $OR_{supervisor}$ = 1.60 [1.44–1.77]; Primary Reserve: $OR_{supervisor}$ = 1.24 [1.08–1.44]; DND Public Service: $OR_{supervisor}$ = 1.20 [1.00–1.43]). Differences were also noted according to family status, although no discernable pattern emerged; these results are not reported.

Pandemic-related concerns

In addition to drastic changes to their work arrangements, Defence Team personnel reported many concerns due to the pandemic, which spanned multiple domains of their work and home life. As shown in Figure 1, the top concerns generally touched on the health and well-being of a loved one, including the well-being of one's spouse/partner or child(ren), a loved one contracting COVID-19 and the health of a medically vulnerable loved one, irrespective of whether participants were Regular Force, Primary Reserve or DND Public Service personnel. DND Public Service personnel generally reported concerns in higher proportion, although apparent differences between the three groups are likely attributable to their distinct sociodemographic profiles and should be interpreted with caution.

The mean number (standard error) of pandemic-related concerns reported by participants was 6.82 (0.05) in the Regular Force, 5.79 (0.07) in the Primary Reserve, and 7.50 (0.06) in the DND Public Service.

FIGURE 1
Percent reporting pandemic-related concerns, COVID-19 Defence Team Survey, April to May 2020
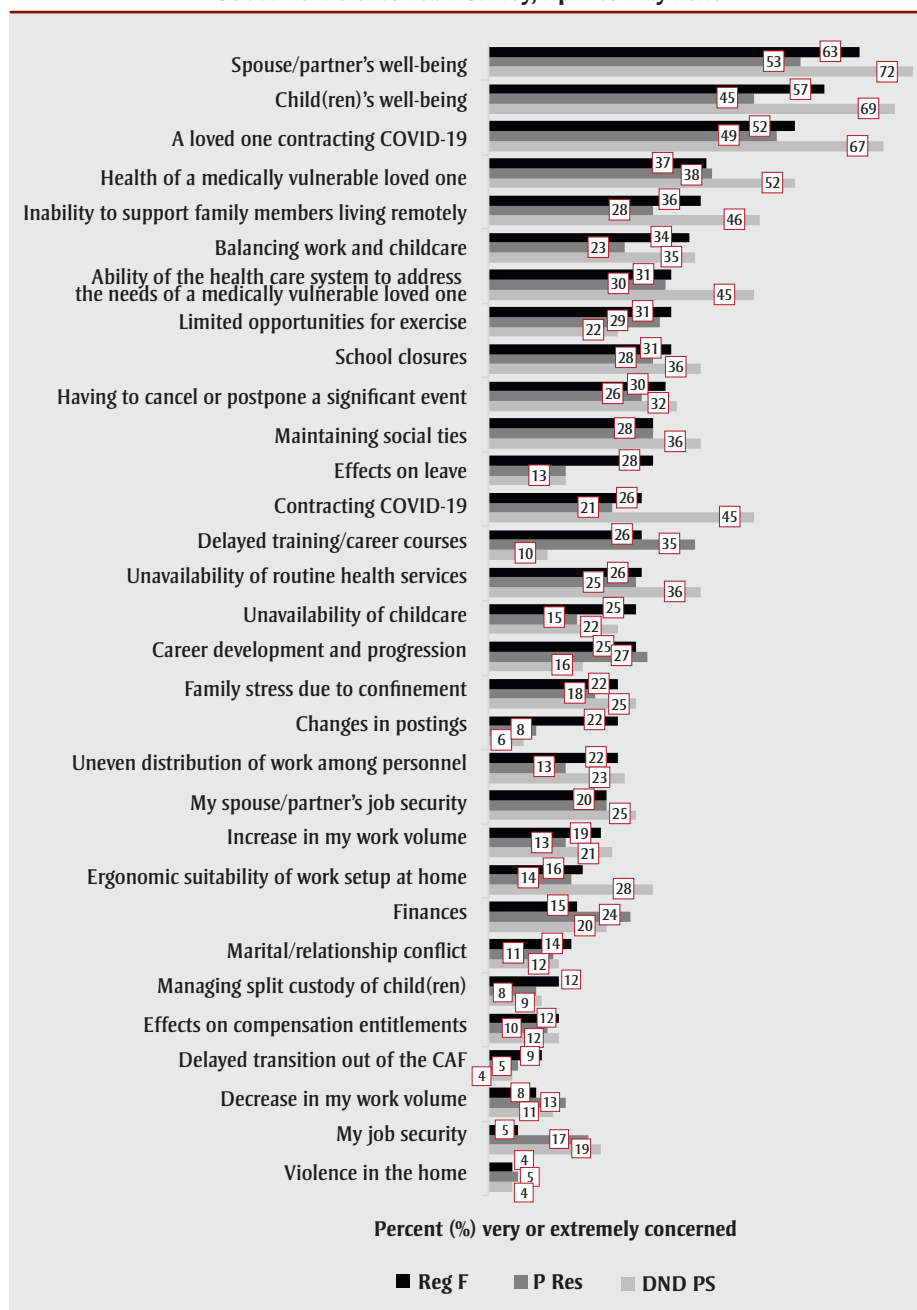
Abbreviations: CAF, Canadian Armed Forces; DND PS, Department of National Defence Public Service; P Res, Primary Reserve; Reg F, Regular Force.

Although there were some exceptions, results of Poisson regression analyses generally pointed to higher rates of concerns among women relative to men, all age groups relative to those aged 24 years and under, participants who supervise personnel relative to those who do not and participants who have dependent children (whether or not they are married) relative to those who are single with no dependent children (Table 2). Notably, similar rates of concerns were observed between men and women among Regular Force personnel. As well, similar rates were observed between participants in the youngest and oldest age groups, and between single and married participants without dependent children among DND Public Service personnel.

Well-being

In light of the various challenges and stressors reported by Defence Team

	Regular Force	Primary Reserve	DND Public Service
	IRR (95% CI)	IRR (95% CI)	IRR (95% CI)
Gender			
Men	Ref	Ref	Ref
Women	1.03 (0.99–1.06)	**1.16 (1.10–1.24)**	**1.04 (1.00–1.07)**
Age (years)			
Up to 24	Ref	Ref	Ref
25–34	**1.41 (1.29–1.53)**	**1.30 (1.21–1.39)**	**1.23 (1.09–1.39)**
35–44	**1.55 (1.46–1.64)**	**1.57 (1.46–1.69)**	**1.36 (1.21–1.53)**
45–54	**1.73 (1.64–1.82)**	**1.48 (1.37–1.60)**	**1.15 (1.03–1.30)**
55 and over	**1.41 (1.33–1.49)**	**1.12 (1.01–1.25)**	0.96 (0.86–1.08)
Supervising personnel			
No	Ref	Ref	Ref
Yes	**1.23 (1.20–1.27)**	**1.13 (1.07–1.19)**	**1.07 (1.03–1.10)**
Family status			
Single—no dependent child(ren)	Ref	Ref	Ref
Single with dependent child(ren)	**1.49 (1.40–1.58)**	**1.11 (1.02–1.21)**	**1.36 (1.27–1.47)**
Married—no dependent child(ren)	**1.22 (1.18–1.27)**	**1.11 (1.03–1.18)**	1.02 (0.97–1.07)
Married with dependent child(ren)	**1.64 (1.59–1.70)**	**1.57 (1.48–1.67)**	**1.41 (1.34–1.47)**

Abbreviations: CI, confidence interval; DND, Department of National Defence; IRR, incidence rate ratio; Ref, reference category.

Note: Bolded values are significant at $p < 0.05$.

personnel, it is not surprising that notable impacts on well-being were reported. In terms of specific aspects of mental health, just over 1 in 10 personnel reported feeling lonely half the days or more in the past two weeks (11% Regular Force, 12% Primary Reserve and 11% DND Public Service personnel). As well, 15% of Regular Force, 14% of Primary Reserve and 21% of DND Public Service personnel reported feeling emotionally drained half the days or more in the past two weeks.

As shown in Table 3, differences in these aspects of mental health were also noted between groups. Specifically, women were consistently more likely than men to report feeling lonely. Regular Force and Primary Reserve members aged 25 years or older had decreased odds of feeling lonely compared to those aged 24 years and under, as did DND Public Service personnel aged 35 years or older compared to those aged 24 years and under. Supervisors also consistently showed decreased odds of feeling lonely compared to participants who did not supervise personnel. Finally, participants who were married—regardless of whether they had any dependent children—showed decreased odds of

feeling lonely compared to those who were single without any dependent children.

In accordance with findings above, women consistently showed greater odds of feeling emotionally drained. Differences were also found across other groups, although with less consistency. Regarding age, findings generally pointed to increased odds of feeling emotionally drained for participants who were in their mid-forties or younger, and decreased odds for participants who were older compared to those aged 24 years and under. These findings may be related to the degree of childcare burden faced by participants in these age groups. Indeed, increased odds of feeling emotionally drained were also observed among Regular Force participants with dependent children compared to those who were single without any dependent children. Finally, Regular Force and DND Public Service participants who supervise personnel had elevated odds of feeling emotionally drained compared to those who do not.

In terms of broad impacts on mental health (results not shown), almost half of DND Public Service personnel (48%) and approximately one-third of military

personnel (36% Regular Force and 32% Primary Reserve) reported that their mental health had gotten worse since the start of the pandemic. In particular, 6% of Regular Force, 5% of Primary Reserve and 8% of DND Public Service personnel reported that their mental health had gotten significantly worse since the start of the pandemic.

Support

As shown in Figure 2, Defence Team personnel most often reported receiving significant support from their spouse/partner (76%–79% across the three groups). Still, roughly 60% also reported that their family, friends and, notably, work supervisor were significant sources of support. The latter is supported by other findings from this survey; specifically, the vast majority of personnel indicated that their supervisor was supportive in various ways during the pandemic (Figure 3). The mean ratings (standard errors) assigned by participants across the seven items shown in Figure 3 were 4.73 (0.01) in the Regular Force, 4.81 (0.01) in the Primary Reserve and 4.84 (0.01) in the DND Public Service.

Although perceived supervisor support was very high, a few group differences were noted (results not shown). Specifically, supervising personnel was associated with lower support scores among CAF personnel (Regular Force: $B_{supervisor} = -0.05$ [95% CI: -0.10 to -0.002]; Primary Reserve: $B_{supervisor} = -0.13$ [-0.20 to -0.06]), as was being a woman in the Regular Force ($B_{woman} = -0.15$ [-0.22 to -0.07]). Some differences by age group were also observed, though a clear pattern was difficult to discern. For example, being between the ages of 35 and 44 years was associated with decreased scores among both Regular Force ($B_{35-44yrs} = -0.09$ [-0.16 to -0.01]) and DND Public Service personnel ($B_{35-44yrs} = -0.21$ [-0.41 to -0.02]). However, other findings were mixed (Regular Force: $B_{25-34yrs} = -0.16$ [-0.23 to -0.09], $B_{55+yrs} = 0.20$ [0.08 to 0.31]; Primary Reserve: $B_{45-54yrs} = 0.12$ [0.03 to 0.21]; DND Public Service: $B_{45-54yrs} = -0.24$ [-0.43 to -0.05]). No differences were observed according to family status.

Discussion

The COVID-19 Defence Team Survey was developed to assess Defence Team members' experiences and needs related to the COVID-19 pandemic in key areas of their

TABLE 3
Results of unadjusted logistic regressions examining the associations of demographic factors with well-being indicators, COVID-19 Defence Team Survey, April to May 2020

	Feeling lonely			Feeling emotionally drained		
	Regular Force	Primary Reserve	DND Public Service	Regular Force	Primary Reserve	DND Public Service
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**1.50 (1.27–10.78)**	**1.48 (1.17–1.87)**	**2.04 (1.70–2.46)**	**2.12 (1.84–2.45)**	**2.05 (1.64–2.57)**	**1.92 (1.67–2.21)**
Age (years)						
Up to 24	Ref	Ref	Ref	Ref	Ref	Ref
25–34	**0.75 (0.61–0.90)**	**0.70 (0.56–0.88)**	0.69 (0.41–1.16)	1.23 (0.99–1.51)	1.19 (0.95–1.51)	1.15 (0.70–1.88)
35–44	**0.55 (0.45–0.67)**	**0.50 (0.35–0.70)**	**0.51 (0.31–0.85)**	**1.76 (1.43–2.17)**	**1.34 (1.01–1.78)**	1.18 (0.73–1.89)
45–54	**0.47 (0.37–0.61)**	**0.26 (0.18–0.37)**	**0.34 (0.21–0.56)**	1.18 (0.94–1.50)	0.77 (0.57–1.03)	0.70 (0.43–1.11)
55 and over	**0.30 (0.12–0.46)**	**0.18 (0.10–0.34)**	**0.27 (0.17–0.45)**	0.72 (0.50–1.03)	**0.38 (0.22–0.65)**	**0.42 (0.26–0.68)**
Supervising personnel						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	**0.73 (0.64–0.84)**	**0.60 (0.48–0.74)**	**0.72 (0.59–0.87)**	**1.35 (1.20–1.52)**	0.90 (0.74–1.09)	**1.18 (1.02–1.36)**
Family status						
Single—no dependent child(ren)	Ref	Ref	Ref	Ref	Ref	Ref
Single with dependent child(ren)	0.83 (0.66–1.05)	0.79 (0.61–1.03)	1.07 (0.77–1.50)	**1.54 (1.20–1.97)**	0.99 (0.75–1.30)	1.28 (0.95–1.72)
Married—no dependent child(ren)	**0.33 (0.27–0.40)**	**0.33 (0.23–0.47)**	**0.27 (0.22–0.34)**	0.89 (0.76–1.05)	**0.74 (0.56–0.98)**	**0.54 (0.45–0.65)**
Married with dependent child(ren)	**0.27 (0.22–0.32)**	**0.30 (0.21–0.44)**	**0.34 (0.27–0.43)**	**1.33 (1.15–1.53)**	1.13 (0.88–1.46)	1.03 (0.86–1.24)

Abbreviations: CI, confidence interval; DND, Department of National Defence; OR, odds ratio; Ref, reference category.

Note: Bolded values are significant at $p < 0.05$.

well-being. Together, results highlight some of the central challenges that personnel have faced as a result of the pandemic, many of which might have stemmed from the substantial changes to work arrangements, concern for family members and added pressure faced by personnel having to navigate daycare and school closures.

Not surprisingly, many challenges reported by Defence Team personnel crossed over multiple domains of their work and home life. This finding accords with research conducted during past outbreaks, which highlighted the impacts of confinement on family members, challenges related to school closures and balancing childcare and work-related responsibilities.[6,10-12] Furthermore, issues surrounding the impact of physical distancing measures on work–life spillover have been documented. Early in the pandemic, results of the CPSS indicated that 40% of Canadians who were new to working from home as a result of COVID-19 were also living with a child under 18 years of age.[1]

Given the pervasiveness of such impacts, it is not surprising that concerns with health and family and issues related to

mental health and well-being were prominent among Defence Team personnel. Similar to these findings, results of the CPSS administered in late March to early April of 2020 showed that just over half of Canadians indicated that their mental health had gotten worse since the start of the pandemic.[2]
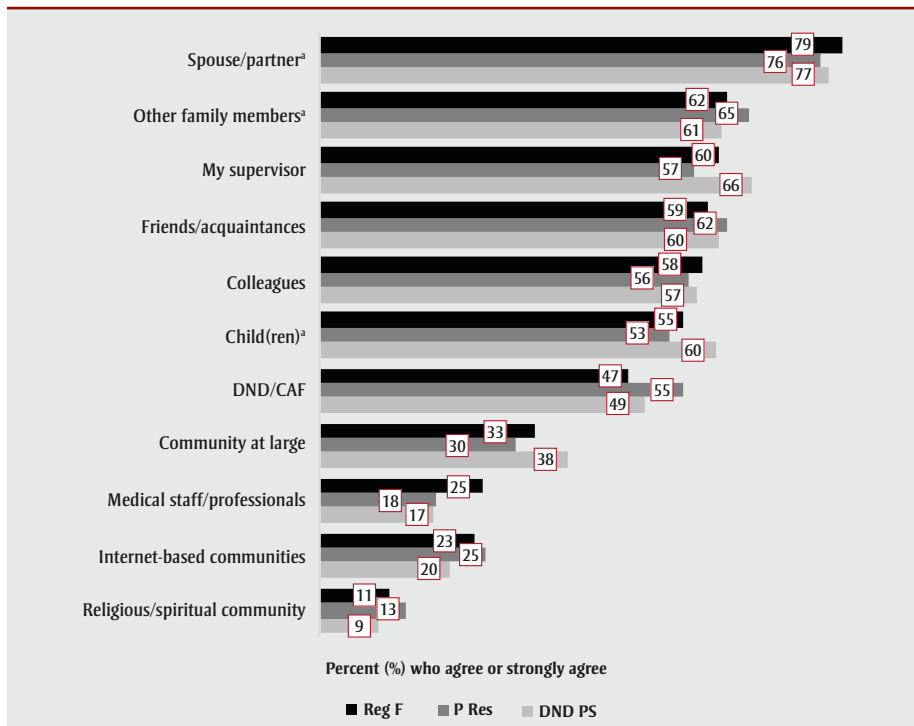
Beyond underlining key challenges faced by members of the Defence Team, results of the survey emphasize that not all of them were impacted in the same way by the pandemic. To summarize, women experienced more concerns, felt lonelier and more emotionally drained and experienced less supervisor support. Older personnel were more likely to work at their usual location, had more concerns, were less lonely and were more emotionally drained. Defence Team members who supervised personnel were more likely to be working at their usual location, had more concerns and were more emotionally drained; however, they were less lonely, possibly as a result of greater contact with others through their work with subordinates. Married personnel with dependent children had more concerns than single personnel with no dependent

children. Married Regular Force personnel felt less lonely, but those with dependent children felt more emotionally drained.

Combined, these results indicate that women, younger personnel and personnel with dependent children were often negatively impacted by the pandemic, consistent with findings based on the general population in other countries.[13,14] Defence Team personnel within these groups may have been more likely to face challenges posed by the closure of schools and daycares, which placed a significant amount of added pressure on them.[15] Notwithstanding the importance of such challenges, results also underline the negative impacts of the pandemic on the well-being of single Defence Team personnel without any dependent children, especially in terms of loneliness. Indeed, social isolation may be especially pronounced among those who live alone or away from loved ones,[16] and has been linked with poorer mental health.[17]

In addition to supporting past research,[5,6,9,17] the findings regarding group differences underscore the importance of adopting a gender-based analysis plus (GBA+) lens

FIGURE 2
Percent reporting significant levels of support from various sources,
COVID-19 Defence Team Survey, April to May 2020

Percent (%) who agree or strongly agree

■ Reg F ■ P Res ▪ DND PS

to account for the unique challenges of individual Defence Team members in the development of organizational practices, policies and programs.[18] In particular, it is important for leaders of organizations to assess and understand the many ways in which diverse individuals might be impacted when facing a crisis, and to carefully consider this information when developing policies and support services to better serve all members of the workforce. Indeed, the present findings further illustrate how different sociodemographic groups may experience the same crisis in varying ways and thereby have distinct support needs.

The fact that perceived supervisor support was high is encouraging, and may relate to the position of supervisors as key players in monitoring well-being and supporting their personnel. Interestingly, Defence Team members who supervise personnel expressed lower levels of perceived supervisor support compared to those who do not, perhaps due to a greater desire or need for support as they navigated the

new and unique challenges of supervising Z are ideally positioned to reduce employees' uncertainty and bolster morale in times of crisis;[20] efforts should be made to engage supervisors at all levels in organizational endeavours to address the impacts of crises on the workforce. In order to ensure that they are well-equipped for this, it is recommended that organizations pay close attention to the well-being of personnel who are in supervisory positions, as they are a key source of support for their personnel in times of crisis in spite of potentially facing many of the same challenges themselves.

Strengths and limitations

The COVID-19 Defence Team Survey was developed and administered over a brief period of time, allowing it to provide key insights on Defence Team members' well-being early in the pandemic. Its strengths include the large sample size and wealth of novel information it generated regarding the workforce in a pandemic context. As a cross-sectional survey, however, results

represent a snapshot of Defence Team members' experiences and may not adequately reflect the experiences of today. Results are also subject to limitations inherent to self-reported data, including recall biases and social desirability. As an initial step, analyses only explored very general group differences in pandemic-related concerns. Further analysis is needed to assess group differences regarding more specific concerns, such as those involving health, work or family. Nevertheless, results to date have provided the DND/CAF with valuable information on how to best address Defence Team members' needs in this challenging context.

Conclusion

Together, results of the COVID-19 Defence Team Survey underscore the critical role of organizational initiatives for addressing the many challenges personnel may face as they strive to be productive while coping with the threat of infection, new ways of working and the increasingly blurred line between their work and personal spaces. In view of the pervasive and evolving nature of COVID-19 restrictions in all spheres of life, continued efforts to ensure supportive leadership, supportive human resources practices and safe work conditions will be critical to the successful reintegration of personnel into the workforce as the crisis subsides.
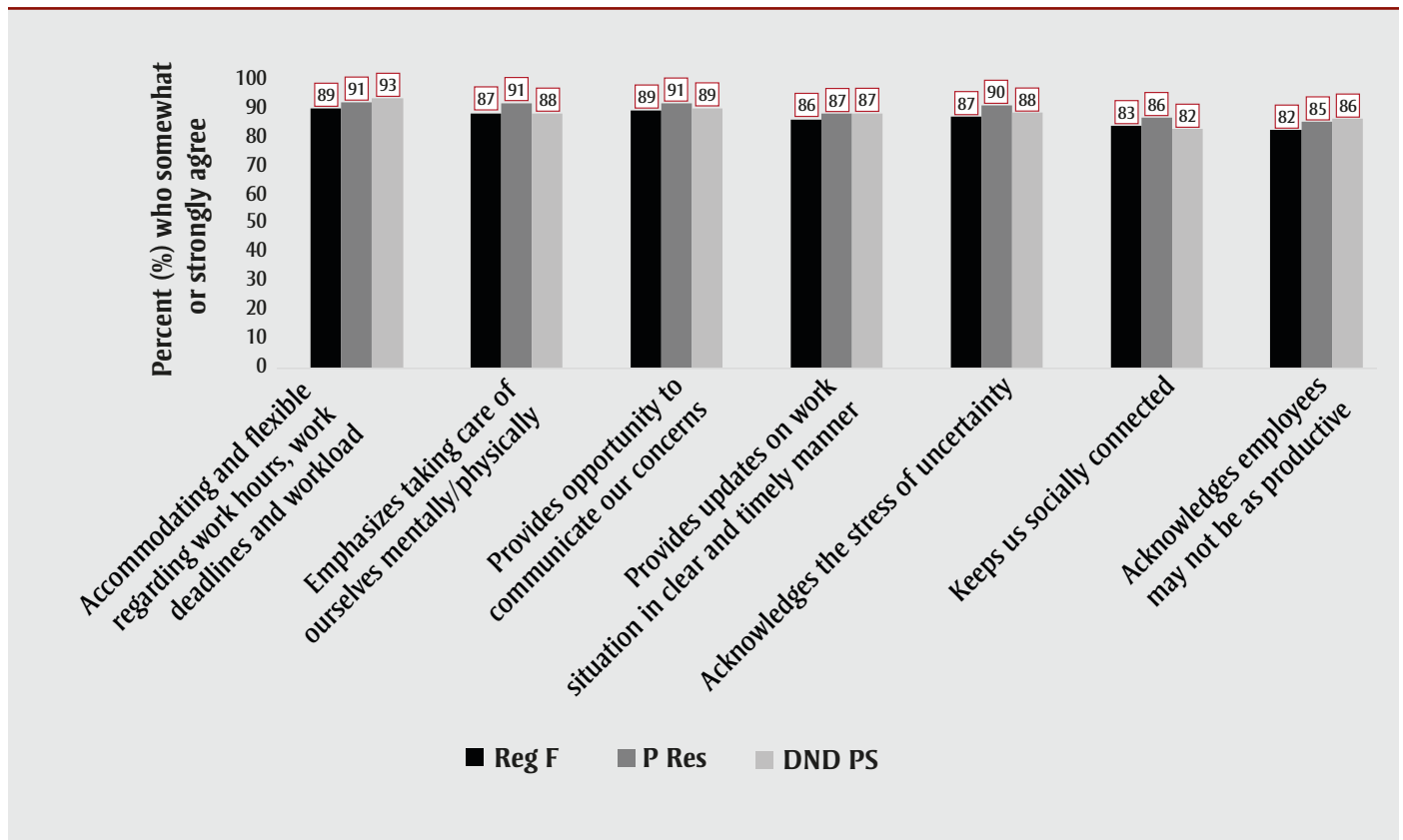
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Conflicts of interest

The authors have no conflicts of interest to declare.

Authors' contributions and statement

JECL was involved in the design and conceptualization of the work, analysis and

FIGURE 3
Percent agreement with supervisor support statements, COVID-19 Defence Team Survey, April to May 2020

Abbreviations: DND PS, Department of National Defence Public Service; P Res, Primary Reserve; Reg F, Regular Force.

interpretation of the data, drafting and revising the paper and approval of the final manuscript for submission. IG was involved in the design and conceptualization of the work, interpretation of the data, drafting and revising the paper and approval of the final manuscript for submission. All remaining authors were involved in the design and conceptualization of the work, analysis of the data, review of the paper and approval of the final manuscript for submission.

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References

1. Statistics Canada. Canadian Perspectives Survey Series 1: COVID-19 and working from home, 2020 [Internet]. Ottawa (ON): Statistics Canada; 2020 [cited 2021 Jun 30]. Available from: https://www150.statcan.gc.ca/n1/daily-quotidien/200417/dq200417a-eng.htm

2. Statistics Canada. How are Canadians coping with the COVID-19 situation? [Internet]. Ottawa (ON): Statistics Canada; 2020 [cited 2021 Jun 30]. Available from: https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2020029-eng.htm

3. Statistics Canada. Canadian Perspectives Survey Series 2: Monitoring the effects of COVID-19, May 2020. Ottawa (ON): Statistics Canada [The Daily]; 2020 Jun 4. Available from: https://www150.statcan.gc.ca/n1/en/daily-quotidien/200604/dq200604b-eng.pdf?st = x-5hztDP

4. Canadian Institutes of Health Research [CIHR], Research Nova Scotia, New Brunswick Health Research Foundation. In progress: organizational response to disease outbreak [Internet]. Ottawa (ON): CIHR; 2020 [cited 2021 Jun 30]. Available from: https://www.ohpdata.com/covid-19

5. Maunder R. The experience of the 2003 SARS outbreak as a traumatic stress among frontline healthcare workers in Toronto: lessons learned. Philos Trans R Soc Lond B Biol Sci. 2004;359(1447):1117-25. https://doi.org/10.1098/rstb.2004.1483

6. Wenham C, Smith J, Morgan R. COVID-19: the gendered impacts of the outbreak. Lancet. 2020;395(10227):846-8. https://doi.org/10.1016/S0140-6736(20)30526-2

7. Walter Reed Army Institute of Research (WRAIR). Behavioral Health Advisory Team – COVID-19 Assessment [survey questionnaire]. Silver Spring (MD): WRAIR; 2020. Available from: https://www.army.mil/article/235636/behavioral_health_assessment_team_bhat_covid_19_assessment

8. Robillard R, Saad M, Edwards J, et al. Social, financial and psychological stress during an emerging pandemic: observations from a population survey in the acute phase of COVID-19. BMJ Open. 2020;10(12):e043805. https://doi.org/10.1136/bmjopen-2020-043805

9. Substance Abuse and Mental Health Services Administration (SAMHSA). Challenges and considerations in disaster research. [Disaster Technical Assistance Center supplemental research bulletin]. Rockville (MD): SAMHSA; 2016. 13 p. Available from: https://www.samhsa.gov/sites/default/files/dtac/supplemental-research-bulletin-jan-2016.pdf

10. Liu JJ, Bao Y, Huang X, Shi J, Lu L. Mental health considerations for children quarantined because of COVID-19. Lancet Child Adolesc Health. 2020;4(5):347-9. https://doi.org/10.1016/S2352-4642(20)30096-1

11. O'Sullivan TL, Amaratunga C, Phillips KP, et al. If schools are closed, who will watch our kids? Family caregiving and other sources of role conflict among nurses during large-scale outbreaks. Prehosp Disaster Med. 2009; 24(4):321-5. https://doi.org/10.1017/s1049023x00007044

12. Sprang G, Silman M. Posttraumatic stress disorder in parents and youth after health-related disasters. Disaster Med Public Health Prep. 2013;7(1): 105-10. https://doi.org/10.1017/dmp.2013.22

13. Chandola T, Kumari M, Booker C, Benzeval M. The mental health impact of COVID-19 and lockdown-related stressors among adults in the UK. Psychol Med. 2020:1-10. https://doi.org/10.1017/S0033291720005048

14. Hamel L, Lopes L, Muñana C, Kates J, Michaud J, Brodie M. KFF coronavirus poll: March 2020 [Internet]. San Francisco (CA): KFF; 2020 [cited 2021 Jun 30]. Available from: https://www.kff.org/global-health-policy/poll-finding/kff-coronavirus-poll-march-2020

15. Power K. The COVID-19 pandemic has increased the care burden of women and families. Sustain Sci Prac Pol. 2020;16(1):67-73. https://doi.org/10.1080/15487733.2020.1776561

16. Guérin E, Price J, Lee JEC. The human dimensions of COVID-19: (3) Managing family stress. [Briefing note ref. no. DRDC-RDDC-2020-B012]. Ottawa (ON): Director General Military Personnel Research and Analysis; 2020. 3 p.

17. Leigh-Hunt N, Bagguley D, Bash K, et al. An overview of systematic reviews on the public health consequences of social isolation and loneliness. Public Health. 2017;152:157-71. https://doi.org/10.1016/j.puhe.2017.07.035

18. Johnstone R, Momani B. Gender mainstreaming in the Canadian Armed Forces and the Department of National Defence: lessons on the implementation of gender-based analysis plus (GBA +). Armed Forces Soc. 2020;62(3):500-19. https://doi.org/10.1177/0095327X20956722

19. Forbes S, Birkett H, Evans L, Chung H, Whitman J. Managing employees during the COVID-19 pandemic: flexible working and the future of work. Birmingham (UK): Work Inclusivity Research Centre, University of Birmingham; 2020. 33 p. Available from: https://www.birmingham.ac.uk/Documents/college-social-sciences/business/research/responsible-business/managerial-experiences-during-covid19-2020-accessible.pdf

20. Charoensukmongkol P, Phungsoonthorn T. The effectiveness of supervisor support in lessening perceived uncertainties and emotional exhaustion of university employees during the COVID-19 crisis: the constraining role of organizational intransigence. J Gen Psychol. 2021;148(4):431-50. [Epub 2020 Jul ahead of print.] https://doi.org/10.1080/00221309.2020.1795613