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Addressing the needs of military members, Veterans and their families during the COVID-19 pandemic

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Mental health and force generation in a pandemic: Findings of an international military symposium

COVID-19 has been postulated to pose a threat to the mental health of military personnel worldwide. Given the unique structural and social aspects of military life, and the increased use of military personnel in Military Aid to the Civil Authorities operations during the pandemic, the effect of COVID-19 on military populations requires further investigation. An online symposium was held in partnership between the NATO Military Mental Health Panel of the Committee of the Chiefs of Military Medical Services (COMEDS MMHP), the Canadian Armed Forces (CAF) and the Canadian Institute for Military and Veteran Health Research (CIMVHR) on Sept. 17, 2020, organized by the authors.

The aims of the symposium were to examine the impact of the pandemic on the presentation of mental health disorders in military personnel, consider actions the armed forces of NATO members should take in the initial phase of a pandemic and in the extended phase when contagion containment restrictions might be less severe, but enduring. Finally, it aimed to examine strategies to maintain NATO readiness in the context of possible, or actual, contagion on military operations. Attended by MMHP representatives and invited observers, thanks are owed to the speakers: Col. Clare Bennett (New Zealand), Capt. Joshua Morganstein (US) and Lieut.-Col. Suzanne Bailey (Canada), supported by the professorial discussants Professor Sir Simon Wessely (UK), Professor Carl Castro (US) and Col. Eric Vermetten (Netherlands).

The main finding of the symposium was that the early data available did not suggest an increased incidence of mental health disorders in military personnel purely driven by the pandemic. Whereas COVID-19 has altered the presentation of mental disorders to treatment services, with many nations reporting an initial decline in referrals, COVID-19 has not been shown to affect the aetiology of mental disorders in military personnel thus far. The principle limitation of this finding is that it may not hold true in the longer term given the impact of COVID-19 on civilian populations and the tendency of mental health presentations to be delayed when resulting from disasters involving chemical, biological, radiological or nuclear (CBRN) contamination or contagion.[1,2,3] Distressing mental health symptoms, even if not meeting clinical thresholds for disorders, were identified as being common in military populations during the pandemic, and worsening with enduring social restrictions.

Several factors were agreed to be important in the promotion of good mental health and the prevention of progression to mental disorder. Good leadership was considered central, and was thought to require consistent communication; the provision of well-being resources, often virtual; peer- and leader-arranged discussions that normalize and provide information; realistic training on contagion threat to inform realistic expectations of missions; and maintaining unit cohesion and social support networks. Service personnel should be able to make use of information and mental well-being support on virtual platforms.

Interventions currently exist in the armed forces of several NATO members aimed at preventing mental disorders and to promote mental well-being and these require further research.[4] Some of these interventions, such as that described by Shelton et. al, in this special issue, also support Veterans and families. It was also agreed that NATO armed forces should have robust whole-force health surveillance programs. These would be able to detect and target high-risk groups with enhanced psychoeducation, support, and health surveillance. It would also form part of much-needed formal epidemiological research into the mental health effects of COVID-19 in military personnel.

In view of potential risks to mental health in operations involving contagion risk, and to support leadership, mental health specialist support would be required on operations provided by forward mental health teams or, where appropriate, technologically enabled remote advice. Remote consultations were considered essential in maintaining clinical care in military settings during a pandemic. Practice implications and clinical observations of virtual care in the military context are described by Roth in this special issue. Technology, such as Remote Video Consultations (RVC), may also have considerable benefits for

routine care in future. Further research is required, however, on the efficacy of therapeutic interventions delivered virtually in a military population.

The "Confronting the pandemic: A mental health perspective and maintaining operational readiness of NATO forces" symposium enabled the sharing of information between NATO military mental health services and an assessment of current challenges to force generation, enhanced by the input of subject matter experts as speakers and professorial discussants. Further research is required into the effects of COVID-19 on mental health of military personnel and on the efficacy of interventions. Force generation in a pandemic requires activities to promote mental health in military personnel by ensuring cohesion, morale, cultural acceptance of mental health problems, healthy habits and help-seeking, which can be achieved by leadership training and the provision of robust, evidenced-based well-being resources.

The prevention of mental disorders necessitates targeted interventions with higher risk groups, post-deployment stress management, and increased health vigilance. Detection of mental disorders is enhanced by good health surveillance programs, the availability of mental health care, and by commanders who encourage military personnel to seek help. The mainstays of treating mental disorders were judged to be the adequate provision of specialist mental health care, good liaison between mental health specialists and commanders, and the availability of effective, evidence-based, technology-assisted interventions that can be delivered remotely.

The findings of this symposium have been translated into recommendations to the NATO COMEDS. In future editions of this journal, more detailed publications are planned with the invited subject matter experts to summarize the findings of this symposium in more detail.

Maj. H. Thomas de Burgh
Surg. Capt. R. H. Coetzee
Col. Rakesh Jetly
Dr. Stéphanie A.H. Bélanger

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Joining science and experience to combat the effects of COVID-19

The idea of developing a special issue focused on COVID-19 for the *Journal of Military, Veteran and Family Health* (*JMVFH*) began as the media was flooded with images of the height of the pandemic's devastation in Italy. The virus brought about anxiety-inducing discourse, not only in the medical and academic worlds, but also in the broader citizenry. People were grappling to understand COVID-19's modes of transmission, coming to grips with exactly how powerful the virus is, and helplessly watching as patients suffocated by the thousands in overcrowded intensive care units around the globe.

To combat that helplessness, many of our research colleagues took it upon themselves to band together and begin projects to address the impact of COVID-19 on the military, Veteran and family population. They stayed in close contact over email and by phone and found means of safely communicating and collaborating in defiance of the pandemic-imposed isolation and confinement. Those discussions naturally evolved into peer-reviewed papers, brilliantly joining science and experience to make sense of the constantly changing world around them.

Although the pandemic's effects are still being felt worldwide, and massive data on the physical and mental toll of COVID-19 for the military, Veteran, and family population is still being collected, we hope this *JMVFH* special issue will begin a conversation that contributes to the ongoing dialogue about the pandemic. Let it serve as the first step toward better health and well-being for those we strive to serve.

We extend our gratitude and sincere thanks to all of our research colleagues who contributed to this *JMVFH* special issue on COVID-19, as well as to those whose work is ongoing and that we hope to feature in future editions of the journal. We also want to thank Col. Rakesh Jetly, the tireless Guest Editor of this special issue. As a Canadian Institute for Military and Veteran Health Research (CIMVHR) Fellow, he has constantly supported the efforts of our organization, and we are grateful to count him as not only a treasured colleague, but also a friend.

Stéphanie A.H. Bélanger, CD, PhD, and
David Pedlar, PhD
Co-Editors-in-Chief, JMVFH

COVID-19: Cutting through the noise

COVID-19 arrived in our lives in the spring of 2020 like a swirling vortex, sucking up our best-laid plans and spitting out a bedlam of confusion, worry and despair. The virus, and its quick evolution into a worldwide pandemic, took over our collective conscious and dominated conversations and media attention. The constant stream of information about COVID-19 rapidly devolved into an indecipherable string of recommendations, best practices and ever-changing protocols.

We desperately needed the calm voice of science to cut through all the noise.

For military members, Veterans and their families, this special issue of the Journal of Military, Veteran and Family Health, is that voice. It is a reliable, evidence-based publication that contains peer-reviewed information about how some of the world's leading experts are addressing the needs of our beneficiary population during the COVID-19 pandemic. It's an honest and dependable source of knowledge in the midst of the unknown.

This special issue contains articles that address the impact of COVID-19, to date, on the military, Veteran and family population, including historical learnings on pandemic disease events, the necessity of managing COVID-19 during complex humanitarian emergencies, improvising and adapting mental health care for military members and Veterans to comply with social distancing practices, and translating lessons learned from resilient military families to the families of essential workers responding to COVID-19. It also discusses emerging programs for military and Veteran families, and how families can support Veterans recovering from operational stress injuries during the pandemic. The special issue looks at how physical rehabilitation services were delivered to Canadian Armed Forces members to maintain operational readiness, and how a study on Veteran loneliness influenced support during the COVID-19 lockdown in New Zealand. Notably, this issue also contains first-person accounts of delivering and accessing mental health care in a pandemic environment.

Over the next few months, and likely for years to come, there will be endless analysis and criticism of national and international action, and inaction, during this unique event in our history. Ultimately, I am pleased that this special issue chose to address the COVID-19 pandemic crisis as an opportunity to learn, adapt and overcome. The authors shared science, observations, and best practices with an aim to understand and adapt to the new normal.

Col. Rakesh Jetly, OMM, CD, MD, FRCPC
Guest Editor, JMVFH

FOREWORD

National security in the modern world includes military power, economic power, communications capabilities and the health of nations. As the world faces COVID-19, each nation's health is under attack, as well as the health of our military forces, a critical component of national security. Our military and Veterans — who often serve in civilian life in many first responder occupations — and their supporting families are "a part of and a part from" our nation. They face similar health risks as all members of the globe — and more. Their mental and behavioral health depends first on safety, and then on identifying stressors — from lost income to grief — for prevention and intervention.

First identified in late 2019, the viral threat has spread across the globe and become a security risk, both for the economic impacts and, more directly, for the impact on our forces. We are challenged by the question of how to protect service members who are in training, on deployment or in garrison, who work, live in and highly value being part of groups, and whose functions inherently require group work. Deploying ships — always relatively small, contained environments with working and sleeping closely together — are one example that highlights the risk to one component of our service members. Commanders struggle with what is the best response to protect service members and maintain military presence. These are difficult decisions that require consideration of mission, safety, health and national security.

And what about those working in small group environments, from tanks to submarines to special operations forces and... offices? And, of course, our health care teams — "the front line" of exposure where we now know the risk is high — are better protected now than in early January 2020, by available protective equipment, but clinical teams working with COVID-19 patients and units are still at higher risk — perhaps 10-fold greater risk — than other clinical health care providers working in non- COVID-exposed settings.

As our testing improves and increases in availability, nations and militaries will be able to better sustain testing for those at risk and testing of those deploying, as well as surveillance testing to best identify non-symptomatic carriers, in order to protect those whom they might expose. The availability of a vaccine will highlight the importance of early access for military members to ensure national security. Nations will have to address questions of access across wide regions and diverse populations. Vaccine hesitancy — the expected tendency for some to decide not to be vaccinated — can decrease our ability to reach herd immunity to best protect communities and nations.

As we learn more about the virus, we will be able to better identify, treat and protect (the first elements in establishing safety), mitigating stress and fostering mental and behavioral health. We all must learn the language of immunology— from PCR tests to cycle number — and of public health — from R values to containment, mitigation and risk reduction strategies — in order to be informed and helpful.[1]

And what are, and will be, the direct mental and behavioral health impacts? First is the impact on those infected, and their families, facing fear and potential loss of loved ones. Second, the health care responders who are highly exposed manage concerns of bringing infection to their families and who face their own risk of serious illness. And third, the people of our nations are managing increased feelings of loneliness, boredom, separation and economic loss. We know such stressors are associated with increased substance use and abuse, family conflict, depression and, importantly, also deferred health care that now has been documented as significantly increasing health problems, manifested by increased morbidity and mortality in some parts of countries.[2]

Communities and organizations, including health care operations and military units, address grief leadership challenges because of the number of COVID-19 deaths. How do we appropriately recognize such loses and sustain communities and workforces, as they prepare for potentially additional waves of illness? How do we address the needs of families and children, when children need the regularity of school, and families long for their enduring friendships and, yet, each carries risk burdens?

The conflicts these emotions stir often make evident the fault lines in our societies around race, economic/social and, now, health disparities and religious differences. Social distancing, as we know, is actually best thought of as physical distancing and social connectedness, and it is hard to do. Practicing medical care from a distance — we learn about telehealth — its advantages (e.g. availability, access) and disadvantages (e.g. emotional connections of doctor and patient, inability to do physical exams). Similarly, we experience COVID stressors in our office workplaces, as telework brings easy access to work, but often increased stress of lost boundaries of work versus

life, and the challenges of educating children while from home. We know from other studies that work-life balance is an important moderator of risk for mental illness, including posttraumatic stress disorder.

In this volume, these and other challenges are identified and addressed, with helpful and critical interventions discussed to protect and care for service members, Veterans, families and our nations. This is an ongoing process of our learning more, applying our knowledge and learning more again. Learning and caring, the basic principles of medicine and leadership, guide this volume and the actions that can inform our way forward.

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FAST FACTS

Fast facts on COVID-19 and the Canadian Armed Forces

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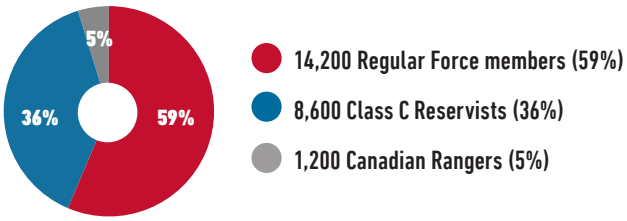
Operation LASER, the Canadian Armed Forces' (CAF) response to the worldwide COVID-19 pandemic, began Mar. 2, 2020, with the activation of Contingency Plan LASER, a preparedness posture for responding to pandemics of influenza-like diseases across the globe[1]. The three lines of effort for OP LASER were to preserve and protect CAF personnel and maintain operational capabilities; assess CAF activities at home and abroad and take measures to limit infection and; ensure the CAF was ready to support Government of Canada objectives and requests for assistance[1]. During OP LASER, the CAF established a 24,000-person response force capable of supporting domestic operations and requests for assistance from provincial authorities[2]. CAF support during OP LASER included assisting the Public Health Agency of Canada with warehouse management of personal protective equipment (PPE), contact tracing for Public Health Ontario, providing care to citizens in long-term care (LTC) facilities and providing essential support to relief efforts in individual municipalities and communities[1].

FACT 1

Of the 24,000-person response force established to assist with the COVID-19 pandemic, 14,200 were Regular Force members, while 9,800 were Class C reservists, including 1,200 Canadian Rangers. The response force took part not only in OP LASER, but also OP LENTUS, the CAF's standing mission to provide support for forest fires, floods, and natural disasters in Canada when required[2].



FACT 2

The Canadian Forces Snowbirds flew over approximately 194 cities, towns and villages in 10 provinces May 3-16, 2020, during OP INSPIRATION, a cross-country tour to salute Canadians doing their part to fight COVID-19[4,5].

FACT 3

Between April and July 2020, 1,700 CAF members worked in 54 LTC facilities in Ontario (7) and Quebec (47) where regular staff were overwhelmed by the pandemic[1]. Members worked closely with facility staff to carry out day-to-day operations and support infection control and prevention. As of July 7, 2020, 41 CAF members working at LTC facilities in Quebec, and 14 working at facilities in Ontario, had contracted COVID-19. All 55 cases were resolved as of July 7 and no deaths were recorded[2].

1,700
CAF members worked in LTC facilities

54
LTC facilities received CAF help during the COVID-19 pandemic

FACT 4

Between Apr. 16 and Jun. 26, 2020, 30 dental officers, technician-hygienists and technicians from across the country worked seven days a week to assist Public Health Ontario with contact tracing. A team from 1 Dental Unit made phone calls to identified contacts of confirmed COVID-19 cases to quickly identify new cases, verify if contacts had needed support, and improve the understanding of COVID-19 epidemiology[1].

FACT 5

Five Royal Canadian Navy warships were sent to sea as part of the CAF's initial response to the pandemic in order to protect their COVID-19 free status and be ready for OP LASER assignments. The ships returned to normal readiness posture on May 22, 2020[2].

FACT 6

The CAF continued to participate in international operations during the pandemic, including NATO allied exercises as part of OP REASSURANCE and building the capabilities of military forces in Middle East through OP IMPACT. Due to the security situation in Iraq and COVID-19, Joint Task Force IMPACT relocated people and materials from the country in March and April 2020. In the span of 25 days, the CAF moved more than 250 passengers, 519,000 pounds of cargo, 107 aircraft pallets and more than $8M worth of equipment and material[3].

FACT 7

During the pandemic, 400 members of 1 Canadian Ranger Patrol Group (CRPG) provided essential support, such as humanitarian assistance and establishing emergency operations centres, to relief efforts in the Yukon, Northwest Territories and Nunavut. 2 CRPG deployed over 200 Rangers to assist 28 communities in three areas (North Shore, Basse-Côte-Nord, Nunavik) of Quebec. A total of 157 members of 3 CRPG deployed to Kaschechewan First Nation and Fort Albany May 5-20 in preparation for flooding in Northern Ontario. Forty Rangers from 4 CRPG assisted local officials in Saskatchewan with wellness checks, transportation and distribution of supplies, food and medicine, data collection and combating food insecurity. Members also staffed community-operated command posts and delivered medication, food and supplies in B.C[1].

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COMPETING INTERESTS

None declared.

DISCLAIMER

The opinions and information reported are those of the authors.

CONTRIBUTORS

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CAF health protection during pandemic disease events: 1918 and 2020

Robert C. Engen[a]

ABSTRACT

The pandemic of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), poses serious challenges to the Canadian Armed Forces (CAF). They are not, however, novel challenges, as the CAF weathered an almost identical situation in its history. This article presents new research findings on the 1918–1919 H1N1 influenza A pandemic's effect upon the Canadian Corps (Cdn Corps) fighting in France and Belgium during the Hundred Days Campaign of 1918. This was a quantitative and qualitative study, randomly sampling 685 cases from the 5,542 Cdn Corps deaths between September 15 and November 11, 1918. Of these 685, 44 were killed by influenza or pneumonia (6.4%), suggesting with the margin of error that between 260 and 450 Canadians died of influenza in France, a comparatively low number considering the Corps was undertaking high-intensity operations in a region of France badly afflicted with influenza. Qualitative population traits are assessed. Among many important elements that may have bearing upon COVID-19 response, one in particular is drawn out for discussion: non-pharmaceutical interventions in the light of effective leadership. This study ultimately makes recommendations for how the experience of the 1918–1919 pandemic on Canadian fighting formations can inform force health protection (FHP) measures in 2020.

Key words: 1918–19, CAF, Canadian Armed Forces, Canadian Corps, COVID-19, H1N1 influenza, influenza, pandemic

RÉSUMÉ

La pandémie de la maladie à coronavirus 2019 (COVID-19) causée par le syndrome respiratoire aigu sévère à coronavirus 2 (SARS-CoV-2) représente de sérieux défis pour les Forces armées canadiennes (FAC). Ces défis ne sont toutefois pas nouveaux, car les FAC ont vécu une situation pratiquement similaire au cours de leur histoire. Le présent article expose de nouvelles observations sur l'effet de la pandémie de grippe A H1N1 de 1918-1919 sur le Corps d'armée canadien qui a combattu en France et en Belgique pendant l'offensive des Cent-Jours de 1918. Cette étude quantitative et qualitative est réalisée auprès d'un échantillon aléatoire de 685 des 5 542 décès du Corps d'armée canadien entre le 15 septembre et le 11 novembre 1918. Ainsi, 44 de ces 685 décès ont été causés par la grippe ou la pneumonie (6,4 %), ce qui laisse supposer qu'en tenant compte de la marge d'erreur, de 260 à 450 Canadiens sont morts de la grippe en France, un nombre comparativement faible puisque le Corps d'armée canadien participait à des opérations de haute intensité dans une région de la France durement touchée par la grippe. Des caractéristiques qualitatives de la population sont évaluées. Parmi les nombreux éléments importants qui peuvent avoir une incidence sur la réponse à la COVID-19, l'un est soulevé tout particulièrement : les interventions pharmaceutiques à la lumière d'un leadership efficace. La présente étude se termine par des recommandations tirées de l'expérience de la pandémie de 1918-1919 sur les formations de combat canadiennes pour éclairer les mesures de protection de la santé des forces armées en 2020.

Mots-clés : Corps d'armée canadien, COVID-19, FAC, Forces armées canadiennes, grippe H1N1, influenza, pandémie, 1918-1919

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INTRODUCTION

The pandemic of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), poses serious challenges to the Canadian Armed Forces (CAF). The need to maintain force readiness is jeopardized by the demands of enacting the strictest force health protection (FHP) measures ever implemented. The entire population is immunologically naïve to SARS-CoV-2, and pharmaceutical interventions remain unproven. Recent research published in the journal *Nature* confirms that society is still at the beginning of the pandemic.[1]

While the situation today seems unprecedented, the CAF has weathered an almost identical situation in the past. COVID-19 emerged 101 years after the 1918–1919 H1N1 influenza pandemic. The 1918–1919 pandemic unfolded in three waves: in the spring/summer of 1918, in the autumn of 1918, and in the winter of 1919. The second wave was particularly virulent, creating an atypical mortality distribution, disproportionately striking those between 20 and 40 years of age.[2] One estimate fixes the 1918 H1N1 virus reproduction number (R_0) at 2.4–4.3 for community transmission.[3]

This article presents new findings on the 1918 pandemic's effects upon the Canadian Corps (Cdn Corps) on the Western Front. Influenza within the Cdn Corps itself has not been studied.[4] The official history contains no mention of second-wave influenza on the Western Front at all.[5] During the second wave, the Cdn Corps was undertaking the high-intensity combat operations of the Hundred Days Campaign (August 4–November 11, 1918). According to the official medical history of the Canadian Expeditionary Force (CEF), influenza accounted for 45,960 infections and 776 deaths among soldiers overseas, and pneumonia caused 4,712 cases and 1,261 deaths throughout the war.[6] Comparisons with other armies are difficult because mild cases were often unreported, but the French Army of 4 million soldiers suffered approximately 28,000 deaths from influenza in 1918, and the American Expeditionary Force (AEF) in France had 344,000 hospitalizations during the second wave. The 88th Division AEF lost one-third of its personnel as influenza casualties in October 1918, and on October 14 alone, 80 men from the 88th Division died from disease.[7] In contrast, the smaller Cdn Corps came through the pandemic completely intact and capable of conducting high-intensity operations.

Some lessons learned during the Canadian experience of 1918 might be applicable in 2020 as the CAF confronts the COVID-19 outbreak. There are many parallels between the COVID-19 and 1918–1919 H1N1 outbreaks, particularly in terms of R_0 and immunological naivete. This present article offers new data on influenza prevalence among the Cdn Corps in 1918 and uses it to explore the dynamics of the pandemic, particularly looking at non-pharmaceutical interventions. This article does not offer medical or clinical advice. Instead, it offers organizational insights from 1918 that might help the CAF prepare for operations under pandemic conditions. These should be read in tandem with the latest emerging research on COVID-19.

Previous studies have speculated about the immunological protection conferred by one wave of pandemic influenza to subsequent waves. Their findings have been somewhat contradictory.[2,8–10] There are unresolved questions about the H1N1 influenza pandemic's highly unusual "W"-shape mortality curve: 99% of fatal infections occurred in those aged <65 years and nearly 50% of influenza-related deaths in 1918 were those aged 20-40 years.[11,12] Childhood exposure to an H3N8 strain during the 1889-90 influenza pandemic may be one partial explanation for this phenomenon, implying that not all previous exposure results in immune reactions that are beneficial to the patient.[13]

Non-pharmaceutical interventions were the only mitigation measures available in 1918 to try to control the spread of H1N1 influenza among populations. A major study of civilian responses in 1918 showed "a strong association between early, sustained, and layered application of nonpharmaceutical interventions and mitigating the consequences of the 1918–1919 influenza pandemic."[14(p.644)] Particular attention should be paid to the non-pharmaceutical interventions of 1918 because these were key to sustaining operations and are the most relevant and replicable for military institutions today.

RESEARCH FINDINGS

This study examines the service records of Canadian war dead from France and Belgium from September, October, and November 1918, held by Library and Archives Canada. The Commonwealth War Graves Commission (CWGC) lists 5,542 Canadian Army fatalities who meet these geographic and temporal conditions. A random sample of 685 were taken from these 5,542 as the basis of the study. The records of these 685 individuals were examined holistically, including for notes of prior hospitalizations and sickness.

First-wave influenza

First-wave influenza struck the Cdn Corps on April 26, 1918, starting in the 1st Canadian Division (1st Cdn Div) and, within a week, infecting the 4th and 2nd Canadian divisions (4th Cdn Div and 2nd Cdn Div, respectively) as well. "An epidemic originated from billeting too many troops at one time in a cave," wrote the Cdn Corps Deputy Director of Medical Services (DDMS) in May 1918.[15] The cases were mild, however, with few complications or sequelae, and almost no case fatalities.[16] Most soldiers recovered within four days. Very few were admitted to field ambulances, and most convalescence took place in unit billets.[17] A Corps medical bulletin indicated that, "Steps were at once taken to prevent the evacuation of influenza cases and to have them treated in the Divisional Areas. As a result, the Corps suffered no depletion and each Unit emerged from the attack in almost full strength."[18] Case fatalities linked to first-wave influenza were vanishingly low. The assistant director medical services (ADMS) for 3rd Cdn Div tracked approximately 5,000 cases of influenza in his division in June and July of 1918, and only 8.7% of these cases were evacuated as far as a field ambulance.[19] The majority recovered in billets and their service records bear no sign of having contracted the disease.

Second-wave influenza

This study determined that approximately 6.4% of the Canadian soldiers on the continent who died between September 15 and November 30, 1918, were killed by influenza or influenza-related pneumonia. Of the sample of 685 examined, 44 soldiers died of influenza. Extrapolating, approximately 356 of the 5,542 deaths during this period were from influenza. With the margin of error, the total possible number of case fatalities could be as few as 260, and as many as 450. The confidence level was 95%, and confidence interval 1.72.

This study has no way to verify the number of non-fatal influenza attacks in the Cdn Corps. Medical reports from the Hundred Days Campaign are incomplete. The case fatality rate for 1918 influenza is unknown, though one widely-cited estimate puts it at around 2.5%.[12] If this held true for the Canadians, then there may have been as many as 14,000 influenza cases in the Corps. However, there is no sign in the archival documentation of mass influenza casualties or evacuations on such a scale. ADMS 4th Cdn Div reported only 263 cases of influenza in his division for all of October 1918.[20] ADMS 1st Cdn Div reported 734 admissions to medical units for all sickness that month, of which 340 cases were evacuated for further treatment.[16] The total authorized strength of these divisions was about 22,000. "Very little sickness among the [troops]," ADMS 3rd Cdn Div reported on November 1, 1918.[19] Mild clinical manifestations of second-wave influenza would not have required evacuation or medical treatment – Cdn Corps policy mandated segregation, dispersion, and sheltering in place. There is no suggestion in the records of a Corps outbreak rivaling that of spring-summer 1918.

The mean age of the case fatalities was 28.5 years. The median and mode of their ages was 29 years. A total of 40% (18) of the influenza fatalities were between the ages of 28 years and 31 years. The case fatalities for influenza were significantly older than the other fatalities within the Cdn Corps. The mean age of soldiers who died of wounds in the sample of 685 was 26.4 years, the median age was 25 years, and the mode of their age was 22 years. The age differences between those who died of influenza and those who died of wounds are statistically significant ($p = 0.041$). This peculiarity of the age range most affected is consistent with other studies of the pandemic.[2,21–23]

The populations and trades within the Cdn Corps that experienced case fatalities were unusual. Of the 44 influenza deaths in the sample, only 18% (8) were from the infantry. In comparison, of the original sample of 685 fatalities, 77% (527) were from the infantry or one of the mounted rifle battalions, not unexpected under the circumstances of the campaign. Eleven others (25%) were from the Canadian Engineers or the Canadian Railway Troops (and the Railway Troops were not part of the Cdn Corps).[5] DDMS Cdn Corps war diary for October 16, 1918, mentioned inspecting the Canadian divisional reinforcement camps at Aubin-Saint-Vaast near Boulogne in the lines of communication (LOC), because the influenza epidemic had gotten into the machine gun and engineer camps.[17] There were eight from the field artillery, and eight from the Canadian Forestry Corps (the latter were also not part of the Cdn Corps). Only one death was recorded among medical personnel. Each Canadian influenza death came from a unique military unit. Notably, of the 44 influenza-related deaths in the sample, only eight (18%) of the soldiers arrived in France after July 1918. A total of 82% had been serving in France at the time of the pandemic's first wave.

This study also found that influenza was prevalent in the Cdn Corps area of operations in October and November 1918. Civilians in the liberated areas of France

and Belgium suffered heavily. "All civilians were more or less suffering from malnutrition and accompanying debility, due to privations suffered while under German occupation," wrote the ADMS for 3rd Cdn Div. "An epidemic of Influenza was rampant, and many deaths had occurred from complications thereof, such as septic pneumonia and syncope."[24] Between October 23 and November 23, 3rd Cdn Div treated 6,000 French civilians for influenza in their homes around Somain, treated another 830 in hospital, and evacuated 415.[19] Starting October 18, 1st Cdn Div was feeding 12,000 civilians daily, and reported treating 2,581 influenza cases among civilians prior to November 11.[16]

DISCUSSION

The evidence from this study is inconclusive about protection offered by first-wave infection. No Canadian soldier who died of influenza in the sample had been hospitalized for sickness during the first wave of the pandemic, but this is not proof one way or another. It is possible that widespread infection in the first wave produced greater rates of immunity among the Canadians during the second wave. But 82% of soldiers who died of influenza-related illness in 1918 had been present in France during the widespread outbreaks of the first wave, so it seems likely that some of them were included in the exposure envelope. As the evidence currently stands, it appears the first wave of the pandemic resulted in many cases of influenza in the Cdn Corps, but few deaths, and the second wave resulted in many more deaths, but fewer cases overall. Precisely why this was so remains unknown.

Research suggests the influenza viral load of an infected person may drive severity of the disease.[25–27] A 2010 study by Paulo et al used mathematical modelling to show that a novel H1N1 virus spreading in an immunologically naïve population would experience multiple waves with varying case fatality rate, when severity was linked to viral dosage.[28] This model has explanatory potential and is simpler than other explanations involving multiple influenza viruses simultaneously circulating globally.[12] However, even with this model, it remains unclear why the Cdn Corps outbreak in spring 1918 had almost zero fatalities, but the autumn outbreak had around 350. Perhaps fewer opportunities existed for the virus to cross-infect in the Cdn Corps during the second wave. This study's sample indicates disproportionately low mortality rates among infantry units, and disproportionately high rates among engineer, railway, and forestry units, and in the Corps reinforcement camps along the LOC. Infected individuals were usually those in camps, working closely with civilians, or those along the LOC that also served as an evacuation chain. The fighting units, on the other hand, were in dispersed battle postures or billets near the front, and most influenza cases among them were not being evacuated or concentrated, as per policy.[15] The comparative lethality of influenza on packed Canadian troopships and reinforcement camps might support the viral load hypothesis.[6,28] However, the fatality peak among 28-year-old soldiers strongly suggests other complex immunological mechanisms were involved as well, as viral load alone is unlikely to account for this. New sources or methodologies are required for further work.

The mean, median, and mode of the sample fatality cases hold further points of interest. The Canadian soldiers most likely to die in the pandemic were those aged 28 through 31. They had been young children during the previous H3N8 influenza pandemic of 1889-90.[13] One plausible explanation is that exposure to H3N8 in early childhood in 1889 enhanced mortality during 1918 H1N1, since early life influenza partially determines future immune reactions.[2,22] This seems consistent with the case fatality rate of the 1918 pandemic. The spike in case fatality rate among those born at the time of the previous pandemic cannot be coincidental and suggests not all prior viral exposures are immunologically advantageous. This was, at most, one factor among several, but illustrates the complexity of immunity.

Non-pharmaceutical interventions

The Canadian forces at the sharp end in France did a good job of minimizing exposure and transmission, even while undertaking high-intensity combat operations, as indicated by the limited spread of influenza in the Cdn Corps itself. Colonel J.A. Amyot, the Consultant in Sanitation to the Canadian troops in England, wrote on October 14, 1918, that, "there are no reports of [influenza's] presence among our troops in the French fighting zone. These must be guarded against by every possible means."[29] The statistics from this study support this observation: while influenza did occur, it was not spreading via major outbreaks in the Corps itself. Of the 44 influenza-related deaths found in the sample, no two were from the same unit. This strongly suggests an influenza experience that was broad, rather than deep: individual cases resulting from operating in a disease-saturated environment occurred but did not

translate into widespread lethal outbreaks among units. Outbreaks in the LOC were kept under firm control and did not result in the disease being passed forward to the fighting formation.[17]

During the second wave of the pandemic, the main source of danger for the Cdn Corps was from soldiers being sent up the line to reinforce the Corps as it fought in France and Belgium. Major outbreaks of influenza occurred in early- and mid-October in the training and reinforcement camps in Aldershot, England. With the Cdn Corps undertaking high-intensity combat operations, the demand for reinforcements was insatiable and urgent, and the risk of influenza being transmitted via drafts of soldiers rushed across the English Channel was high. "Every effort is being made to prevent [influenza] interfering with the despatch of reinforcements," wrote Lieutenant-Colonel George Cassels, Assistant Adjutant General for the Overseas Military Forces of Canada, on October 17, 1918.[30] But with Canadian combat casualties reaching their highest point of the war, disruptions to the flow of reinforcements were unacceptable, and the CEF adjutant general noted in a telegram that "it is not possible for Canadian Corps to base their applications for [reinforcement] drafts" on the influenza outbreak.[31]

Since it was mission-critical for reinforcements to continue to move, the medical services did all they could. The system was two-part. First, the camps were virtually locked down, with all leave cancelled, all dance halls and theatres closed, and all chapels, churches, and other social institutions placed "out of bounds" to troops. Those returning to the camps from leave were put into special segregation huts under medical observation.[32] Second, as part of the transit route from England to France, a system of segregation was established on October 15 wherein thousands of reinforcements were divided into very small groups of a dozen soldiers and placed in separate huts. There they were kept, under strict segregation arrangements, with twice-daily examinations by a medical officer: no leave, no mixing with civilians, and no mixing with other troops whatsoever.

The medical officers in England initially wanted segregation to last two weeks, but this was reduced to a minimum of four days, and as long as possible if the travel arrangements took longer. "If cases of influenza arise during this four days period," the instructions read, "none of the soldiers in the same hut should be considered available for the draft."[29] Distancing and dispersion measures that were as aggressive as the situation allowed helped to quarantine the Cdn Corps from the outbreak in the Aldershot camps. The Aldershot infections continued throughout October 1918, but by November, influenza in the area was waning, and on November 15, lockdowns ended, with troops able to go on leave and visit theatres and dance halls again.[33]

It should be noted that decisions to complicate and slow down the flow of reinforcements during the Hundred Days Campaign, for the sake of disease prevention, would have been extremely difficult ones for leaders to make. But medical best practices needed to be considered when weighing the urgent demands of operations. Disregarding medical advice could have collapsed a crucial barrier separating major influenza outbreaks from the Cdn Corps.

LESSONS FOR THE CAF

From this initial data, it can be stated with confidence that the Cdn Corps was not seriously compromised by influenza during the Hundred Days Campaign, and that its fighting effectiveness was not measurably reduced. This study suggests several lessons for the CAF in facing the SARS-CoV-2 outbreak that are derived from what we know about the 1918 pandemic:

Previous infections are not necessarily beneficial

Widespread infection with first-wave influenza may have had a protective effect for the Cdn Corps during the second wave. However, it is also probable that infection during the 1889–1890 pandemic as infants, rather than providing a protective effect, predisposed otherwise healthy adults aged 28–31 years in the Cdn Corps to particularly severe reactions in 1918.[2] Early indications for antibody responses to SARS-CoV-2 are promising for immunity.[34] However, many viruses do not produce a durable immune response, and insufficient research has been done to make definitive claims about COVID-19 immunity.[35] Some countries and institutions are issuing "immunity passports," but it would be wise to adopt a cautious approach to integrating COVID-19 immunity into FHP plans until more is known.

Viral load may matter

There is evidence that viral load correlates with disease severity in H1N1 influenza cases.[28,36] This trait is being investigated for SARS-CoV-2, as well, and researchers have theorized viral load may partly explain COVID-19's high case fatality rate among health care workers.[37] It may be prudent for policymakers to pay close

attention to research being conducted on viral load as a factor connected to both disease transmissibility and severity. This would be a best practice even if COVID-19's severity was not linked to viral load but will become much more important if it is.

Command responsibility

The Cdn Corps benefited tremendously from leadership buy-in on the importance of FHP measures. Distancing, dispersion, forward treatment, and quarantine of the field force from outbreaks in England and the LOC were only possible because commanders identified disease prevention as a military matter. An October 1918 War Office memorandum on prevention of influenza still has relevance today:

- Overcrowding assists the spread of infection.
- Continuous flushing of the air of occupied huts is essential.
- Personal and environmental "dirtiness" can serve as vectors for the spread of the disease and should be "cleansed by wet hand scrubbing."
- Indiscriminate expectoration is especially dangerous "and when necessary must be prevented by disciplinary measures."[38]

These best practices could have been written in 2020. In 1918, hygiene and disease prevention were unit responsibilities, not medical ones. The only measures that could be taken to prevent influenza were disciplinary and behavioural, and medical officers had no responsibility for these.[39] Command responsibility requires leaders who are literate in the facts, listen carefully to medical advice, know they will be held to account for preventable disease in their commands, but who are willing to take decisive action and accept calculated risks.[40]

COVID-19 has re-educated the world in the fact that epidemics are not just about disease. The interventions available to stop its spread right now are not medical: they are social, behavioural, and structural. Maj.-Gen. Marc Bilodeau, CAF Surgeon-General, wrote in a recent article that, "the evidence available fully supports the possibility of behavioural change. Top leadership involvement and buy-in are critical to success; without them, no meaningful change is possible."[41] In the absence of adequate command attention, modern field hygiene and prophylaxis do not mitigate the operational hazards of infectious diseases. The enforcement of the use of health protection measures is a command responsibility today as much as it was in 1918.[42] Failing to promulgate good health protection advice, or failing to enforce measures rigorously, is an issue of command and leadership, not medicine.

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PEER REVIEW

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Impact of COVID-19 on mental health care for Veterans: Improvise, adapt, and overcome

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INTRODUCTION

The ongoing COVID-19 coronavirus pandemic would, by most definitions, be considered a "crisis." While crises can be overwhelming and often expose vulnerabilities and gaps in our preparedness, they can also be seen as opportunities to quickly adapt, innovate, and learn. Leiden University professor Arjen Boin described a disaster as a "crisis gone bad."[1] Thus, the decisions and actions during crisis may avert disaster. The COVID-19 pandemic is having a broad impact on all aspects of society including health, education, the economy, and many fundamental freedoms.

We have chosen to focus on one important, but symbolic, example to demonstrate how this crisis poses a unique and real threat to the well-being of Veterans, and how that threat can be greatly mitigated through action. At a time when most are being asked to socially isolate[2] and avoid essential travel, it is difficult to determine where regular visits for mental health care fit in.

The emergent threat of a coronavirus pandemic significantly impacts the environment in which mental health care for Veterans and former service personnel is provided. The challenge of containing the spread of infection places a major demand on all health resources – and particularly general practices – because it is likely to further limit their capacity to respond to the health needs of Veterans. This is of considerable importance because of the centrality of general practitioners to the provision of care. Furthermore, the current situation limits the availability of face-to-face care delivery and access to mental health facilities due to the threat of COVID-19 infection.

A further concern is the impact of posttraumatic stress disorder (PTSD) on the resistance to infection within Veterans communities, given the known effects of traumatic stress on inflammatory responses and immunoreactivity.[3–5] Evidence indicates that anyone with PTSD, including Veterans, may be more vulnerable to severe infection,[3] in part due to medical comorbidities; however, just how significant an increased risk this poses in the current pandemic is unclear. Moreover, risk-taking behaviour is common in those with PTSD, and they may develop a fatalistic attitude to the future. Hence, there may be particular challenges in encouraging those suffering from PTSD to self-isolate. Furthermore, being in close proximity to family members without the ability to easily gain distance, take a break from one another, or stick to an exercise program, may increase the risk of aggressive behaviour toward others. Thus, reassuring Veterans their treatment will not be interrupted, and health practitioners will remain available – perhaps via technological means – may be comforting and reduce risk to themselves and family disruption.

The circumstances created by the COVID-19 pandemic require a reconsideration of how health care for Veterans and former service personnel might be organized. Significant thought should be given to how systems of support can improvise, adapt and overcome the issues outlined above during this challenging time.

SUGGESTED STEPS AND PROPOSED SUPPORTS

1. **Promoting increased use of telemedicine consultations:** Remote delivery of mental health services has the benefit of being able to provide ongoing care for those in isolation,[1] while protecting

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the workforce from the risk of infection. Assuming that the community and individuals are well connected (e.g., by telephone, internet, mobile phone), then existing service delivery models can be adapted. This should happen as a priority. Equally, telemedicine consultations can be used to assist in supporting other Veterans in the community who may be struggling with the emerging coronavirus risk.[6] The technology to deliver mental health services remotely already exists in many countries and individuals can be reached without violating social isolation protocols. For example, clinicians can reach out and conduct wellness checks on existing patients to ensure they fully understand the circumstances of the pandemic, have enough medication, and have the means and supplies to self-isolate.

2. **Seeking funding for telemedicine:** Respective governments and other funding agencies, should be approached to allow the delivery of counselling and psychological services without the normal restrictions on distance. There may be requirement for equipment, training, policy, and fee/billing structure/codes changes. Some nations may also require modifications to licence restrictions in the face of this pandemic.
3. **Providing alternatives to inpatient care:** In preparation for a time when psychiatric beds are available only by exception, more consideration should be given to developing home care programs. Due to demands on the health care system created by the COVID-19 pandemic, it is likely psychiatric beds will be diverted to those suffering from infection, and psychiatric hospitalization will be considered a last resort due to infection risk. Home care programs should include increasing monitoring and support of those who are at high risk of deteriorated mental health or suicide, who would normally be hospitalized. This may require considering alternative workforce models, as well as a triage system for access to inpatient care. The level of acuity for access to psychiatric inpatient beds has generally been less for Veterans than for other psychiatric patients. The pressure for hospital beds due to the coronavirus pandemic is likely to change this, and a management plan needs to be developed. Crisis resolution and home treatment are an established mechanism of care delivery.[7]
4. **Developing new communication strategies:** A communication strategy should be developed for the Veteran community to outline how COVID-19 may impact continued services, such as group and inpatient and outpatient mental health programs. The strategy may also include information about managing other social gatherings of Veterans, such as Australian and New Zealand Army Corps Day, Victory in Europe Day, Remembrance Day, and other military celebrations around the globe. Remotely delivered ceremonial activities may be an alternative to in-person gatherings and may assist in mitigating the distress caused by this issue.
5. **Monitoring and support for those already identified as at-risk:** Those already identified as being at-risk may need further support in the context of the COVID-19 pandemic. For instance, Veterans who live on meagre ill-health pensions or benefits may be less able to sustain themselves during a period of self-isolation. Consideration for how best to support such individuals should be treated as a special issue during coronavirus risk response. The development of a program for managing anxiety through exercise and relaxation strategies for those in isolation should be a priority. In addition, technology must be leveraged to disseminate these programs and, ideally, should be tailored to the Veteran context.
6. **Organizing support for health professionals:** COVID-19 risk is an issue acutely felt by health professionals. The need to provide advice and support must be addressed; however, it is unclear whether specific support is required for those involved in caring for Veterans over and above what is provided for other frontline healthcare professionals. As an example, if home visits are suggested as an alternative to hospitalization, then training, equipment and support will be required for mental health care workers providing the home visits. It is also possible that – in countries with ready access to lethal weapons – anxious, irritable, and scared Veterans may pose a risk to health professionals who carry out home visits.[8,9] These risks are in addition to the risk posed by the pandemic itself, and must be considered.[9]
7. **Investing in long-term impacts and suicide prevention:** The SARS epidemic was followed by an increased rate of suicide in those over the age of 65 years.[10,11] This arose as a result of the enduring effects of social isolation, which are shown to have the greatest impact on female suicides.[11] Suicides post-SARS epidemic were partly driven by the concerns of the elderly about being a burden on their families, as well as related anxieties faced during the height of the epidemic.[12] This would suggest that

Veterans over 65 years of age who are socially isolated, with high levels of distress and/or a known risk of suicide, should be targeted for practical provision of support such as grocery delivery and contact by Internet or phone. Support should be planned on a long-term basis and continue after the pandemic subsides, as risks do not greatly diminish.[11]

8. **Monitoring long-term impact on health workers:** The SARS and H1N1 epidemics were found to have significant adverse impacts on health workers, including increased rates of PTSD from dealing with patient suffering, death and personal risk.[13,14] It is important skilled health professionals provide support and advice for frontline workers of the COVID-19 pandemic. This is a role for older practitioners, who cannot afford to risk direct exposure to the coronavirus due to the potential mortality associated with age. Monitoring and provision of care for doctors and nurses working on the front lines should be planned as the pandemic recedes. Follow-up is particularly important for those who contract the virus, due to the high rates of PTSD found in those who recovered from similar infections.[15,16] Care should be taken to watch for long-term symptoms of fatigue and pain, which are a significant cause of morbidity,[17] and this highlights why planning for the care of infected health professionals should be a high priority.

CONCLUSION

Crisis is both a challenge and an opportunity to innovate and adapt. There are lessons to be learned from history and some projection required. The authors chose a vulnerable population (Veterans) for illustration, yet the principles are applicable to many groups. The steps outlined earlier are critical in the time of the current COVID-19 crisis and will remain so for some time after. When it comes time to scale down restrictions to care, it may afford an ideal opportunity to reappraise the value of traditional face-to-face based care.

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Military mental health and COVID-19

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INTRODUCTION

Ensuring optimal mental health care for globally dispersed military service members is challenging during normal operations. The SARS-CoV-2 (COVID-19) pandemic has necessitated a rapid response to ensure ongoing care for existing and new mental health illness as well as pandemic-related distress and behavioural effects. COVID-19 has impacted all sectors of society as a result of containment and mitigation efforts. Stay-at-home orders, travel restrictions, quarantine requirements, and increased isolation have dramatically changed the experience of home and work for military personnel. Economic consequences, such as spousal job loss, further compound existing family stressors. Altered standards of health care, with the need to allocate limited resources, and the sheer volume of deaths create unique, adverse exposures for service members deployed domestically to support pandemic response efforts.[1] Clearly, an invisible enemy has broken through our ranks, battling us on our own home soil, causing death and destruction not previously seen since the influenza pandemic of 1918. Military personnel have accompanied civilian personnel in deploying to the front-line hot spots of this global fight. It is critical to ensure adequate resources to support and protect service members from not only COVID-19 infection, but also the inevitable adverse psychological and behavioural effects to come. Although this article is based primarily on the United States Department of Defense (DoD) response to COVID -19, the principles are likely generalizable to most military populations.

Mental health impacts on military personnel during COVID-19

The delivery of mental health care is an integral part of global health security during disasters, such as the COVID-19 pandemic.[2] The mental health burden of disasters is profound,[3] frequently exceeding and outlasting all other health effects. COVID-19, like many disasters, has created significant disruption, consumed extraordinary resources, and resulted in patterns of adverse psychological and behavioural responses. While most ultimately recover, ongoing fear and uncertainty result in distress reactions (insomnia, stigma, anger, decreased perceptions of safety, increased fear of illness) and increased health risk behaviours (use of alcohol, tobacco, and prescription medications, as well as interpersonal conflict and violence).[3] A March 2020 American Psychiatric Association national poll of adults in the United States found that, as a result of COVID-19, 40% of respondents were anxious about dying, 24% had trouble concentrating on things other than the pandemic, and 8% had increased their use of alcohol and other substances.[4]

Though virtually no literature exists on the effect of pandemics on military personnel, humanitarian disaster missions have been shown to result in a variety of outcomes, including boredom, anger, guilt, depression, and posttraumatic stress.[5] The social distancing measures, as well as requirements for isolation and quarantine, abruptly altered the daily lives of military families and other citizens across the globe.[6] The military, along with the rest of society, may be experiencing collective

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grief around loss of health security, perceptions of safety, social connections, and death and dying rituals. In addition, Veteran populations may be at particular risk for adverse effects as a result of being at high risk for unemployment, vulnerability to social isolation, worsening of pre-existing mental health conditions, and limited financial resources to buffer against economic effects.[7]

Effective containment of the global COVID-19 disaster requires a "whole of health care" response, promoting organization and individual actions.[8] Organizational interventions that promote workforce sustainment during pandemics include adequate training and equipment, communication that is timely and updated, education about normal psychological and behavioural reactions, and facilitation of ongoing and peer and organizational support.[9] In addition, the well-being of health care workers will be enhanced by individual actions, with self-care playing a vital and enduring role. An understanding of both patient and health care worker mental health needs during COVID-19 will enhance health care delivery and optimize sustainment of the workforce. The Department of Psychiatry at the Uniformed Services University in the DoD developed a Mental Health and Well-Being toolkit as part of the DoD COVID-19 *Practice Management Guidelines: Clinical Management of COVID-19*.[10] These guidelines provide a framework for addressing mental health needs during this pandemic to support patients, providers, and leaders. Embedded within the "Behavioural Health and Wellness" section of the guidelines are web links to brief, easy to read, actionable education fact sheets using evidence-based interventions[11] that supplement this framework (see Appendix 1).

Given these impacts, the overarching principles described next are key elements of the framework that guide mental health care during an event such as this pandemic.

MILITARY MENTAL HEALTH CARE DURING COVID-19

Self-care

During the pandemic, one of the most vital tasks for the general population as well as front-line responders – including military personnel – is continued basic self-care. Healthier patients, in general, fare better when they do become ill. Health care workers, support staff, and leaders all perform at a higher level, make fewer mistakes, and make better decisions when they have properly tended to self-care. Self-care is important to sustained response across all sectors. Although health care workers commonly remember to inform patients of the importance of self-care, they are often quite willing to sacrifice their own health, and push just a little further, to ensure the best possible care for patients. Such willingness to sacrifice is laudable, and during normal circumstances, is unlikely to cause substantial compromise within the health care system. In the midst of the current pandemic, decisions to sacrifice personal health and safety must be avoided to preserve the medical force and continue this fight over the long haul. Responding to this pandemic will be a marathon, not a sprint. Leaders at all levels – from the organizational to the small team – need to practise, model, and encourage basic self-care for everyone. Basic needs such as proper sleep, good nutrition and hydration, regular exercise, and regular breaks, are never more vital than now to sustain performance and enhance decision making.

Communication

Second only to self-care, the task of health risk and crisis communication is critically important. Even in the best of times, communication is fraught with such difficulty and complexity, with vibrant industries, organizational elements, and cultures that must synchronize for effective operations. During this pandemic, our words matter more than ever. Clear, concise, and consistent messaging from trusted leaders, between team members, and to patients and their families, is essential. Paradoxically, this same crisis is straining the ability to communicate by adding layers of personal protective equipment, mandating infection control protocols, and necessitating physical distancing and isolation both within and outside the hospital. These realities present a significant barrier to the usual approaches to care, often requiring innovative approaches to facilitate successful communication. Telehealth and virtualization tools were a growing presence in health care before the outbreak of the pandemic. Now, these technologies present an excellent option for a variety of assessments and interventions including mental health as well as communication to family and friends. Across the health care system, numerous creative approaches to communication are being developed and implemented out of acute need. However, despite the best efforts in self-care and communication, individuals will require mental health care, including those with COVID-19.

General mental health care for patients with known or suspected COVID-19

While the primary focus during the pandemic must be the direct physical effects of SARS-Cov-2 virus on those patients developing COVID-19, there are clearly mental health effects experienced by patients with and without a prior history of mental illness. In order to ensure the best possible care for patients in these circumstances, some basic guidelines regarding mental health care have emerged. The recommendations of the authors, adapted from their contribution to the U.S. DoD COVID-19 *Practice Management Guidelines: Clinical Management of COVID-19*,[10] include the following:

1. Promptly identify all COVID-19 patients with known mental illness and consult behavioural health to assist with ongoing care.
2. Patients should be kept informed as to what is happening, what is likely to happen, and next steps in their care (i.e., despite the challenges imposed by the need for expedited care and the challenges imposed by physical distancing and infection control measures).
3. Give patients information and a sense of control in the midst of a stressful and confusing situation.
4. Anticipate patient concerns and misconceptions. Common themes include "What if I can't get a ventilator when I need one?", "What if I have infected my family?", "Will I die alone?" and external stressors such as job loss or housing insecurity.
5. Health care systems should establish easily accessible, consistent pathways for referrals to mental health for family members of patients admitted for COVID-19.
6. Attend to negative impacts of isolation by facilitating virtual connections with providers, family, and loved ones as much as possible. Facilitate regular updates and interactions where possible.
7. Reports of delirium post-ICU stay for COVID-19 suggest longer term cognitive consequences are possible. Patients may require monitoring for longer term effects of both infection and treatment.

For medical providers

Medical providers most directly involved in this pandemic are confronting a reality that has become increasingly compared to war. "Battle," "invisible enemy," and "frontlines" are common terms in reference to the current crisis[12] and hospital workers are being increasingly referred to as "heroes." Medical providers, much like military service members, would be well served to take basic measures for their own well-being during this incredibly strenuous time. Again, recommendations adapted from the authors' contributions to the U.S. DoD *Practice Management Guidelines: Clinical Management of COVID-19*,[10] include the following:

1. Connect to a sense of unified purpose.
2. Foster hope, fortitude, and tolerance in self and others, and encourage expressions of, and acceptance of, gratitude.
3. Amplify positive stories and stories about competent efforts by self and colleagues.
4. Encourage perceptions of competence among staff, especially junior and/or less experienced colleagues.
5. Recognize and attend to signs of burnout in self and others – out of character sadness, frustration, irritability, isolation/disconnectedness, substance use, and lack of self-care.
6. Focus on what can be controlled – checklists, routines, self-care.
7. Accept what cannot be controlled.
8. Promote a climate where it is acceptable for team members to talk about difficult events (death, triage, errors). Avoidance and fear of such thoughts are associated with greater long-term mental health problems.
9. Establish a routine of regular team meetings as an opportunity to pass good information, but also as an opportunity for an emotional check.
10. Maintain a climate where it is okay to not be okay and offer peer support when needed.
11. Identify a team member with the responsibility for communicating with family, particularly sharing bad news or death notification. Consider rotating this responsibility.

For mental health providers

Mental health providers have been involved in the response to SARS-Cov-2, across the spectrum of activities, from providing direct medical care to patients in hot spot areas, to caring for medical providers, to ongoing mental health sustainment for the general public. One key contribution from mental health during this crisis will be support for medical providers, support staff, leaders, and others working within the hospital environment. Recommendations adapted from the authors'

contributions to the U.S. DoD *Practice Management Guidelines: Clinical Management of COVID-19*,[10] include the following:

1. Provide proactive support to front line workers where possible, ideally in the form of a behavioural health outreach team with established relationships to points of contact to facilitate increased utilization of outreach team during times of peak stress. Teams should be organized to ensure rounds occur for every shift of every day.
2. Be certain not to overlook groups such as janitorial staff, transport, food service, and others who make the medical system run and who are likely experiencing significant distress.
3. Behavioural health care teams should be empowered to facilitate additional mental health care for those in need, especially those who have had negative experiences.
4. Tailor resources and support as much as is feasible – and plan on changing/adapting resources with the unfolding realities of the medical mission. Flexibility is important.
5. Supportive care of health care workers is different from usual clinical care, and includes:
    a. Check in with the physicians, nurses, technicians, and support staff.
    b. Ask questions (examples include: What's working well this week? What are your biggest struggles this week? What would make things better?).
    c. Link with support services, such as the Red Cross, providing food and beverages.
    d. Provide information on normal distress reactions and adaptive responses.
    e. Promote positive peer support and facilitate connections.
    f. Make connections during a calm time. Do not interrupt urgent patient care or sign-out.
    g. Find a quiet space to talk when things are chaotic.
    h. Ensure individuals have access to safe spaces and emotional/spiritual support.
6. Unique issues to consider when supporting front line workers:
    a. Be aware of the potential for moral distress in providers making difficult and potentially life-or-death triage and management decisions.
    b. Be aware of potential concerns of individual front line workers including, single parents, dual health care worker families, families with serious medical issues, workers living separate from their families, and community stigma of being "infected" as examples.

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DISCLAIMER

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APPENDIX 1: LINKS TO ONLINE RESOURCES (UNIFORMED SERVICES UNIVERSITY, CENTER FOR THE STUDY OF TRAUMATIC STRESS)

a. COVID-19 pandemic response resources can be found at: https://www.cstsonline.org/resources/resource-master-list/coronavirus-and-emerging-infectious-disease-outbreaks-response
b. Resources for leaders in support of health care workers can be found at: https://www.cstsonline.org/covid-19/supporting-healthcare-workers
c. https://info.health.mil/army/bhsl/Covid19/Forms/AllItems.aspx (DoD CAC enabled only)
d. Resources to help in caring for patients and families can be found at: https://www.cstsonline.org/covid-19/caring-for-patients-and-families
e. Resources for health care worker self-care can be found at: https://www.cstsonline.org/covid-19/healthcare-worker-self-care
f. Resources for mental health support for patients can be found at: https://www.cstsonline.org/covid-19/mental-health-support

Living a life less ordinary: What can the families of essential workers responding to COVID-19 learn from UK military families?

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ABSTRACT

Occupational stressors raised by the COVID-19 pandemic may negatively impact on the short and long-term mental health of essential workers as well as that of their family members. Given the lack of research in this area, reflecting on similarities in the experiences of military families could help identify ways to help support the families of COVID-19 essential workers. This article presents an overview of United Kingdom research on the experiences of military families during separations and the corresponding impacts on their mental health, psychological well-being, and relationships. It considers what helps military families cope during challenging times and discusses lessons that could be adapted from the military community and applied to COVID-19 workers to support families of other occupational groups during times of increased stress and pressure. Lessons learned are applicable not only to those responding to the COVID-19 pandemic but also to similar future events.

Key words: children, COVID-19, essential workers, mental health, military families, military personnel, pandemic, reservists, resilience, spouses, UK, well-being

RÉSUMÉ

Les facteurs de stress professionnels soulevés par la pandémie de COVID-19 peuvent nuire à la santé mentale des travailleurs essentiels et des membres de leur famille à court et à long terme. Étant donné le peu de recherches réalisées auprès des familles des travailleurs essentiels, une réflexion sur les similarités des expériences des familles de militaires pourrait aider les familles des travailleurs essentiels dans le contexte de la COVID-19. Le présent article donne un aperçu des recherches britanniques sur les expériences des familles des militaires pendant les séparations et sur les répercussions qui en découlent pour leur santé mentale, leur bien-être psychologique et leurs relations. On y aborde ce qui aide les familles des militaires à composer avec les périodes difficiles et y énumère des leçons qui peuvent être tirées du milieu militaire et appliquées aux travailleurs de la COVID-19 afin d'aider les familles d'autres groupes professionnels en période de plus grand stress et de plus forte pression. Les leçons acquises peuvent être utilisées non seulement par ceux qui répondent à la pandémie de COVID-19, mais également dans le cadre de futurs événements du même ordre.

Mots-clés : bien-être, conjoints, COVID-19, enfants, familles de militaires, pandémie, personnel militaire, réservistes, résilience, Royaume-Uni, santé mentale, travailleurs essentiels

INTRODUCTION

Prior research has highlighted how occupational stressors and trauma can impact the mental health of emergency responders, with high levels of posttraumatic stress disorder (PTSD), depression, sleep problems, and burnout among this population.[1] The impact of working under the pressures of COVID-19 on the mental health and psychological well-being of essential workers, including doctors, nurses, those involved in emergency response, as well as certain administrative staff, delivery drivers, and people working in food sales and distribution,[2] is not yet known. Challenging work situations, potential concerns about exposure for themselves, family and friends, and taking responsibility for difficult

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decisions have been suggested as potentially negatively impacting the short- and long-term mental health of essential workers.[3] However, the potential impact on families of essential workers has not yet been fully considered within COVID-19 research, despite evidence suggesting that spouses, partners, and children may be affected by the occupational stress of their loved ones.[1]

POTENTIAL IMPACTS ON FAMILIES OF ESSENTIAL WORKERS

Given the nature of the COVID-19 response, essential workers in some professions will likely be engaged in extended shift patterns, with elevated occupation-related stress and a reduction in time at home. This will inevitably require others within the family, including children, to take on additional household and caring responsibilities during the lockdown period. Workers may have concerns about potentially infecting family members, causing them to opt to live away from home to protect those at home.[4] This increases pressure on other family members and can create guilt and concern among those unable to be at home.[5] During the Ebola outbreak in 2014–2015, occupational pressures were found to negatively influence family life and relationships, increasing anxiety and stress among family members of police officers and humanitarian workers assisting in the crisis.[6] Since family members can also be an essential source of informal support,[7] the impact of COVID-19 on family members is also an important concern for essential workers managing work-related stress during the pandemic.

These pandemic-related experiences and their impacts may be new to essential workers and their families or may heighten ongoing stress. One population that has experienced similar occupational stressors on family life are military personnel and their families. Increased separation and disruption to family life due to postings, training, and deployment requirements are common to military life and can often occur at the last minute or be subject to change with little notice.[8] The pressure this places on families can result in resentment and frustration within couples[9] and poorer mental health outcomes compared to the general population.[10] Such issues can affect the wider family, as well, resulting in behavioural issues among children.[11] The impacts of service life on family and personal life can be challenging to manage, and are regularly the top factor influencing intention to leave full-time military service in the United Kingdom.[12]

Much research has focused on risk factors for poor mental health and psychological well-being among military families, but a substantial amount of information exists about resilience within the military community. This could be utilized to understand how to best support essential workers and their families and inform initial interventions. This article presents an overview of some the experiences of UK military families and how these could be used to help support essential workers and their families during the COVID-19 pandemic.

THE EXPERIENCES OF MILITARY FAMILIES IN THE UK

Deployment and family separation

Deployment, usually overseas to an operational conflict, is the focus of much of the research on military families, given its high profile in the public eye and associated risks. Unlike some international literature,[13,14] UK-based research suggests that deployment, per se, is not associated with adverse outcomes among spouses/partners[10] or children from military families.[15] These differences may be due to the shorter length of UK deployments and the associated reduction in stress on family members. Military families often report needing a period of adjustment when personnel return from deployment to allow the family to resume usual roles and behaviours.[16] This has been shown to apply even for short-term weekly separations that may be similar to experiences of some frontline workers during the COVID-19 pandemic.[5] Relationship satisfaction can vary over the deployment cycle, increasing before and just after deployment,[17] suggesting a "honeymoon effect" followed by difficulties adjusting to family life on return.

Operational deployments overseas are not the only deployments military personnel may experience. Drone operators may be engaged in operations while on military bases, transitioning back to the family environment at the end of each shift. UK research has shown there may be greater alcohol use and lower levels of functioning due to poor mental health in this population[18] that is likely to impact family life. Similar issues may arise among families of essential workers where workers are cycling in and out of the family home due to shift-work.

Other forms of separation are also common for UK military families, including training or duty requirements. In a 2019 survey of the spouses/partners of UK tri-service military personnel, 23% reported living apart

from their serving partner, with 30% separated for over three months in the previous year.[19] These separations can be challenging for the family unit and often require flexibility around usual family roles and relationships. Due to the physical absence of personnel from home, military spouses/partners have described increased stress due to assuming the role of both parents, difficulties with communication and support from personnel, and problems maintaining employment.[5,8]

Similarly, children and adolescents report problems with changing roles at home, including taking on greater responsibilities, with implications for their mental health and psychological well-being.[20] As outlined by Boss et al, family separation can lead to *ambiguous loss* as a result of confusion and ambiguity created within boundaries and roles,[21] such as postponement of parenting roles and changes to daily tasks or rituals, until the absent member returns. This ambiguity about who is and is not included in a particular family can result in poorer psychological well-being both for family members at home and those living away. Similar issues were reported among families of reservists during deployment.[22]

A large proportion of essential worker families may never have experienced the challenges of occupation-related separation, let alone the sudden risk of a family member being on the frontline of a global pandemic. However, the families of part-time military reservists often have to make rapid adjustments to family life when reservists are mobilized to full-time service. UK research[23] has shown the sudden absence of personnel, combined with risk to life, can be a psychological shock for families at home and may leave them feeling anxious and resentful of an organization perceived to put their loved ones in danger. Family members of reservists and those experiencing deployment and non-deployment related separation often express a strong desire for information about personnel, but there can be confusion about where to access information and what support services might be available. Given rapidly changing information and guidance on COVID-19, it would be expected that similar concerns would be expressed by the families of essential workers that could easily be provided through government information pages.

Mental health and psychological well-being of families

Much research on military family health has focused on how depression and PTSD among military personnel impacts spouses/partners and children.[13] Due to the bi-directional nature of mental health within couples, it is unsurprising that both depression and PTSD are associated with the same outcomes among spouses/partners.[24] Some of this association was found to be the result of prior experiences of spouses/partners themselves, rather than related to PTSD among personnel, or the result of psychological distress arising from living with someone with PTSD.[25] This prior exposure to trauma should be examined in any future studies of essential worker families. PTSD among military personnel has also been shown to negatively influence behavioural outcomes of children,[13] although there is variation by age and gender of the child.[15]

The mental health and psychological well-being of spouses/partners has implications for broader family outcomes, including marital quality and satisfaction. Psychological distress and depression among military personnel can affect that of their spouses/partners,[26] especially when couples have children and their spouses/partners may be required to take on additional caring duties.[27] Poorer mental health and more hazardous alcohol behaviours have been found among UK military spouses/partners compared to women in the general population.[10] Other aspects that may not be considered are the impacts of separation on spouses/partners' ability to maintain healthy exercise and eating habits, which is already difficult being the sole parent at home.[5]

Given the stressors and strains of COVID-19 on families of essential workers, it is possible issues similar to those seen in military families may occur, especially among those working increased hours or opting to live away from the family home due to heightened exposure or greater occupational needs. This may be particularly challenging for families managing this type of separation for the first time, in addition to worry and concern for their loved ones. However, it is important to note military service can be a source of pride and honour for military families, even among those who may experience issues during separation. Spouses/partners report how absence from personnel has led to greater independence, increased confidence, and a focus on spending quality time as a family.[5] Children report feeling proud of their fathers for serving in the military and express appreciation for the opportunities they have as members of a military family.[28] High levels of pride in partners are also reported by spouses/partners of serving personnel.[19]

What helps military families?

One of the key influences on military family health is the support available within the military community, especially from other military families and dedicated welfare staff. Connection to the community is seen by some as a benefit of military life, with families who are less likely to live in military housing (such as Naval families) reporting they feel less connected to the military community compared to spouses/partners of personnel in the Army or Royal Air Force, who tend to live in Service Family Accommodation.[29] Additionally, military families benefit from policies and welfare services aimed at supporting families, both emotionally and practically, such as the Armed Forces Families Strategy,[30] that directly links maintaining operational effectiveness with family outcomes.[31] While a "fishbowl" effect is reported by some spouses living in military accommodations on base, the emotional and practical support given by other families is reported to be invaluable; it can help families manage the frequent absences of military personnel,[32] thereby benefiting psychological well-being and mental health.[33] Another avenue of support for families is schools, which can play an important role in supporting children who may be struggling due to parental absence. Schools with students from military backgrounds often have great experience in providing this support, and while school closures complicated delivery (restricting it to online only), information on understanding common issues experienced by military families can be found through networks such as the Service Children's Progression Alliance (SCiP) network in the United Kingdom.[34]

Current guidelines on social distancing make these connections more difficult to establish and maintain. However, initiatives introduced across bases, via military charities, the Naval, Army, and Royal Air Force Family Federations, and through online platforms such as Facebook, have sought to maintain this community virtually and use the community to establish activities for children, even celebrating birthdays.

Organizations, including military charities and welfare services with a remit for supporting families, have long shared advice on how to manage separation resulting from deployment. Similar approaches are adaptable to shorter separations, and include preparation, having a regular routine, seeking out support from others, planning enjoyable activities, and learning relaxation techniques.[35–37] Many are mentioned by families themselves as ways of coping.[38] Naval families report using telephone calls and online technologies to allow parents away from home to participate in children's lives, from dinner time to discipline.[5] Not only does this help maintain the absent family member within the family home, but it also eases their return.

There are simple steps families take to help manage separations. Families of reservists who, like many essential workers during the COVID-19 pandemic, may be less accustomed to separations, seem to cope best by developing new routines while keeping the deployed person involved in what is going on at home, but not to the detriment of day-to-day decision-making. Having access to information about support, maintaining open communications about new routines on the return of the deployed personnel, and talking to others in similar situations was associated with families feeling they coped well with family separation.[23] Good quality communication with the absent family member is also key.[5]

RECOMMENDATIONS FOR ESSENTIAL WORKERS AND THEIR FAMILIES

Until additional research is conducted, the following recommendations could be used to help support essential workers and their families by benefiting from what is known about the experiences of military families:

Establish community support networks

While identifying groups that may be more at risk of poorer outcomes is not possible until further research is conducted, there are some groups who may be more at risk. For example, employees with lower positions within organizational hierarchies, or those managing a greater number of challenges (e.g., at-risk people at home, children with additional needs, poorer support, or greater and more sporadic periods of separation from their loved one) will likely find the pandemic experience more challenging. Essential workers will not have access to the same level of support as that provided by the military welfare system. There are likely to be differences in organizational culture, resulting in less community cohesion than that found in military units and military communities established on, and near, military bases. However, organizations responsible for essential workers could seek to replicate facets of this support by creating informal networks of support between colleagues, providing opportunities for charitable and social events to develop the community, and extending welfare support for workers to include family members. Such steps would help provide additional support for families

experiencing difficulties and stress due to a loved one's involvement with the COVID-19 response, as well as future-proofing the health and well-being of essential workers.

Share common experiences between military and essential worker communities

There are a number of similar experiences between the families of military personnel and essential workers, including stressful and unplanned work absences. Sharing expertise from within the military community could help other families experiencing separation and work-related stressors. Online resources from military family charities could also be adapted and shared. Research on essential worker families, and how they perceive and navigate these separations, and concerns about COVID-19, should be examined as a matter of urgency to understand how best to support this community. In the meantime, emergency responder federations could share information for both workers and family members on common issues that may be experienced, and how these issues might be overcome.

Potential interventions and policies

A number of family-based interventions tested within the military community could be explored in other contexts to help support family functioning, mental health, and psychological well-being. These could be adapted from existing programs in the United States, such as Families Over-Coming Under Stress (FOCUS).[39] Any intervention will need to be developed to be sector-specific but could have generalizable advice applicable to all families undergoing a period of stress. Until social distancing guidelines are relaxed, delivery will need to be virtual, as is already occurring with FOCUS. Organizations employing essential workers could also introduce policies explicitly outlining support for families to improve readiness and resilience by drawing on family resilience theories to adapt those developed by the military.[40]

CONCLUSION

Many military community experiences could be used to help support the families of essential workers under times of increased stress and pressure. While there are differences, the ability of military families to respond to sudden, and often last-minute, changes to work schedules and, for some, to flourish during this time, can be a blueprint for how to best support the families of those responding not only to COVID-19 but also to similar future events.

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COMPETING INTERESTS

Rachael Gribble has no competing interests to declare. Vincent Connelly is employed part-time by the Ministry of Defence (MOD). He has not been directed in any by the MOD regarding this article. Nicola T. Fear is partially funded by a grant from the UK Ministry of Defence and is a trustee of a Veterans charity.

CONTRIBUTORS

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Ultra-rapid development and deployment of a family resilience program during the COVID-19 pandemic: Lessons learned from *Families Tackling Tough Times Together*

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ABSTRACT

The 2020 COVID-19 pandemic brought uncertainty, anxiety, and stress into households; however, it also created an opportunity as many families, sequestered at home, found themselves spending much more time together. To support families and improve their ability to cope, recover, and build resilience amid the pandemic, Purdue University's College of Health and Human Sciences (HHS) launched *Families Tackling Tough Times Together* (FT), a strength-based multi-week online program informed by scientific evidence about family resilience. Offered through a Facebook group, FT targeted parents or caregivers, children, youth, young adults, older adults, and helping professionals serving families. FT was designed to appeal to both military and civilian families, in part because both groups were experiencing similar challenges associated with the pandemic. This was not only an opportunity to bring civilian and military families together, but also for civilian families to learn from the experiences of military families in surmounting significant challenges. This article describes the development and implementation of the FT program, as well as lessons learned. Strategies highlighted in this article may be helpful to researchers or practitioners who wish to implement a rapid-response intervention aimed at building family resilience.

Key words: COVID-19, Facebook, Families Tackling Tough Times Together, family resilience, military families, military family, pandemic, resilience, resilience skills

RÉSUMÉ

La pandémie de COVID-19 de 2020 a engendré de l'incertitude, de l'anxiété et du stress dans les ménages, mais a également suscité des possibilités, car de nombreuses familles séquestrées à la maison se sont trouvées à passer beaucoup plus de temps ensemble. Pour soutenir les familles et les aider à améliorer leurs capacités d'adaptation, à se relever et à renforcer leur résilience au cœur de la pandémie, le Collège des sciences de la santé et des sciences humaines de l'Université Purdue a lancé *Families Tackling Tough Times Together* (FT), un programme en ligne de plusieurs semaines axé sur les forces et reposant sur des données scientifiques relatives à la résilience familiale. Offert par l'entremise d'un groupe Facebook, FT visait les parents ou les proches, les enfants, les adolescents, les jeunes adultes, les adultes plus âgés et les professionnels en services d'aide auprès des familles. FT visait à la fois les familles des militaires et des civils, en partie parce que les deux groupes vivaient des difficultés semblables liées à la pandémie. C'était non seulement une occasion de rassembler les familles des civils et des militaires, mais également de permettre aux familles des civils de tirer des enseignements des expériences des familles des militaires à surmonter de grandes difficultés. Le présent article décrit la création et la mise en œuvre du programme FT, de même que les leçons qui ont été dégagées. Les stratégies soulevées dans le présent article pourraient être utiles aux chercheurs ou aux praticiens qui souhaitent adopter une intervention rapide pour renforcer la résilience familiale.

Mots-clés : aptitudes à la résilience, COVID-19, Facebook, Families Tackling Tough Times Together, famille de militaire, familles des militaires, pandémie, résilience, résilience familiale

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INTRODUCTION

As the 2020 COVID-19 pandemic spread, many countries declared health emergencies and implemented strategies such as travel restrictions, closures of schools and nonessential businesses, and stay-at-home orders.[1] These rapid changes brought uncertainty, anxiety, and stress into households, as families faced isolation and found themselves teleworking – or abruptly unemployed – while caring for children who were home from school or daycare.[2] Additionally, fear of contracting or dying from COVID-19 and risks for loved ones heightened anxiety levels.[3] These challenges were compounded by the alarming rate at which information and misinformation about COVID-19 quickly circulated, causing confusion and leaving people feeling overwhelmed.[4]

The pandemic presented several challenges for families and those interested in supporting them. It also presented an opportunity for promoting family resilience amid the pandemic, as many families were now sequestered at home, spending much more time together than usual. In response, Purdue University's College of Health and Human Sciences (HHS) rapidly built and launched *Families Tackling Tough Times Together* (FT), a strength-based multi-week online program informed by scientific evidence about family resilience. Specifically, the FT program was guided by Walsh's Family Resilience framework, a widely cited model that is consistent with current evidence, and that postulates resilience goes beyond simply enduring hardship to encompass developing, through suffering and struggle, capacities that allow families, to grow, change, heal, and emerge stronger and better equipped to tackle future problems and uncertainties.[5,6] Additionally, this well-established framework is easily modularized for program delivery, relevant for many disciplines, and easily adapted for a diverse array of families.[7] Consistent with the model, the FT program reflected the framework's nine key elements which are organized into three domains: (1) Shared Belief Systems (making meaning of adversity, positive outlook, transcendence and spirituality); (2) Organizational Processes (flexibility, connectedness, mobilizing social and economic resources); and (3) Communication/Problem-solving Processes (clarity, open emotional sharing, collaborative problem solving).[7] This article describes the development, implementation, and lessons learned through executing the FT program, a program that moved from conception to launch in 23 days, and leveraged expertise from 70 faculty, staff and students from all nine HHS units, along with academic and support partners across Purdue and organizations across the country. Table 1 acknowledges the work of project collaborators.

METHODS

The approach used to build the FT program reflected the time constraints of the pandemic because it was important for scientists to respond while lockdown periods were still in effect, thus, the program was launched in 23 days. Additionally, time constraints imposed barriers

Table 1. FT's internal working groups and external partners

Working groups			
Parents, Caregivers	Youth	Purdue Partners	Implementation
Cézanne M. Elias[C,6]	**Yumary Ruiz**[F,9]	Tonya Short[S,12]	**Shelley M. MacDermid Wadsworth**[F,6]
Barb Beaulieu[S,12]	Zoe Taylor[F,6]	Jane Horner[S,12]	Rena Sterrett[S,13]
Naomi Bechtold[S,12]	Kelly Kean[C,17]		Kathy Broniarczyk[S,13]
Caroline Everidge[S,12]	Marcia Parcell[S,12]		Andrea Wellnitz[S,13]
Karen Atcheson[C,17]	**Kristine Marceau**[F,6]		Lara Balian[S,2]
Carole DeHaven[S,5]			Allison Sochinski[S,13]
Carl Behnke[F,16]			Kristen Cavallo[S,13]
Gail Wright[S,12]			Nayantara Nair[G,6]
Dawn Sieber[S,16]			Elizabeth Coppola[G,6]
			Carly Evich[G,6,9]
			Meagan Carrero Alessi[S,8]
			Anthony Harsch[U,11]

(Continued)

Table 1. (Continued)

Working groups			
Children	Young Adults	Diversity & Inclusion	Assessment
Elizabeth Schlesinger-Devlin[A,1]	**Thomas S. Redick[F,8]**	**Megan L. Purcell[C,6]**	**Yumary Ruiz[F,9]**
Jim Elicker[F,6]	Heather Servaty-Seib[A,4]	Jiayun Xu[F,17]	Dave Topp[S,13]
Carolyn McCormick[F,6]	Amanda Case[F,4]	Kelly L. LeMaire[C,8]	Dorothy Teegarden[F,7]
Shari Mooney[S,1]		Bridgette Kelleher[F,8]	Austin Toombs[F,3]
Julie Clisby[S,1]		Keisha Bailey[G,6]	Natalia Rodriguez[F,9]
Linda Shute[S,1]		Megan Jaspersen[S,12]	
Aekyeong (Alex) Nacke[S,1]			
Older Adults & Community	Communication	Administration Representatives	
Elizabeth (Libby) A. Richards[F,17]	**Matthew Oates[S,14]**	**Angie Abbott[A,11,12]**	
Elliot Friedman[F,6]	Denise Buhrmester[S,11]	Jessica Huber[A,10]	
Melissa Franks[F,6]			
Lata Krishnan[C,10]			
Nasreen Lalani[F,17]			
Linda Curley[S,12]			
Chunyu Xu[G,4]			
External partners			
Steve Cozza	Center for the Study of Traumatic Stress, Uniformed Services University of the Health Sciences		
Barbara Fiese	Family Resiliency Center, University of Illinois		
Ellen Galinsky	Families and Work Institute		
Abi Gewirtz	Institute for Translational Research in Children's Mental Health, University of Minnesota		
Karen Hinshaw	Clinical and Translational Science Institute, Indiana University School of Medicine		
Meredith Kleykamp	Center for Research on Military Organization, University of Maryland		
Patricia Lester	Nathanson Family Resilience Center, University of California Los Angeles		
Mallory Lucier-Greer & Catie O'Neal	Military REACH, Auburn University		
Daniel Perkins	Clearinghouse for Military Family Readiness, Penn State University		
Nora Spinks	Vanier Institute of the Family, Canada		
Ashish Vazirani & Hannah Pike	National Military Family Association		
Steve Wilson	Military–Civilian Dialogue, University of South Florida		

Working group names in boldface = member of the steering committee.

Working group roles (in superscript): A = Administrator; F = Faculty; C = Clinical faculty; S = Staff; G = Graduate student; U = Undergraduate student.

Working group institutional affiliations (in superscript): 1 = Ben and Maxine Miller Child Development Laboratory School, Dept. of Human Development and Family Studies; 2 = Center for Families, Dept. of Human Development and Family Studies; 3 = Dept. of Computer Graphics Technology; 4 = Dept. of Educational Studies; 5 = Dept. of Health and Kinesiology; 6 = Dept. of Human Development and Family Studies; 7 = Dept. of Nutrition Science; 8 = Dept. of Psychological Sciences; 9 = Dept. of Public Health; 10 = Dept. of Speech, Language, and Hearing Sciences; 11 = Health and Human Sciences Administration; 12 = Health and Human Sciences Extension; 13 = Military Family Research Institute, Dept. of Human Development and Family Studies; 14 = Purdue University Marketing and Media; 15 = School of Health Sciences; 16 = School of Hospitality and Tourism Management; 17 = School of Nursing.

FT = *Families Tackling Tough Times Together*.

to obtaining financial resources. Consequently, in-kind sources were sought. In response, a network of volunteers from multiple areas of expertise was quickly constructed to produce, review, and distribute program materials (Table 1). Partner organizations (Table 1) readily shared developed programs, curricula, instruments, and expertise. Additionally, resilience experts were consulted during the design phase to verify that the program approach would be appropriate and safe for families who were already overburdened by the pandemic.

The program emphasized curation of existing content that was evidence-informed, consistent with the theoretical framework, and adaptable to current circumstances. Ultimately, the developers aimed to provide a limited set of carefully selected resources in order to make it easier for families to navigate flows of information, and misinformation, about the pandemic that could be overwhelming. While the program incorporated efforts to assess reach and use, participation in assessment was not a prerequisite for access to materials.

Participants and setting

This project was reviewed by the Institutional Review Board at Purdue University and determined not to be human subject research. Families were selected as the focus because the pandemic imposed particularly intense demands on them, including providing care for children, carrying out educational and employment activities in close quarters, and often providing assistance for older adult family members. The initiative provided content targeting parents/caregivers, children, youth, young adults, older adults, community service, and helping professionals serving families. The program was designed to appeal both to military and civilian families, as both groups were experiencing similar pandemic-associated challenges. This was also seen as an opportunity to bring civilian and military families together, and for civilian families to learn from the experiences of military families in overcoming significant challenges. A public Facebook group was selected as the delivery platform because Facebook is used by over 69% of U.S. adults,[8] and offers a variety of appealing technical features, including the ability for group administrators to "push" information to group members, for group members to connect directly, and for both administrators and members to communicate publicly, or privately, with one another.[9]

Development of the FT program

Four strength-based goals were selected for the program among group members:

1. to increase awareness of the concept of family resilience;
2. to help families develop and grow resilience skills;
3. to provide activities and resources so families could practice resilience skills;
4. to build a community of support through the Facebook group.

Moreover, the program was structured to reflect the nine key elements of Walsh's Family Resilience framework.[7] This was accomplished by focusing each week on one framework element (see Table 2 for sequence of weekly topics).

Each week, a kit was prepared that included information, activities, and resources tailored for different audience groups, including parents/caregivers, children, youth, young adults, and older adults. The team was attentive to family diversity in terms of structure,

Table 2. The FT's weekly structure guided by theoretical domain

Week	Label for theme	Theoretical domain
1	Believing, Sharing, Acting	Shared beliefs: Communication; organizational patterns
2	Our family can do this!	Shared beliefs: Sharing a positive outlook
3	Our family is creative!	Communication/problem solving: Collaborative problem-solving
4	We care about each other!	Organizational patterns: Connectedness
5	Our family will get through this!	Shared beliefs: Making meaning of adversity
6	We share our feelings constructively!	Communication/problem solving: Open emotional expression
7	Our family is adaptable!	Organizational patterns: Flexibility to change
8	We can get stronger!	Shared beliefs: Transcendence and spirituality
9	We tell each other the truth!	Communication/problem solving: Clear consistent messages
10	We take action!	Organizational patterns: Mobilizing social and economic resources

FT = *Families Tackling Tough Times Together*.

socioeconomic status, culture/ethnicity, living in urban versus rural areas, and the presence of family members with special needs. Additionally, content each week emphasized the importance of strengthening relationships with extended family, friends, and the greater community to prevent or minimize boredom and social isolation that might result from sheltering in place. To accommodate families with limited internet access, program modules were disseminated via PDF documents issued individually, and as one consolidated document each week. Materials also were made available to helping organizations for easy dissemination.

The process of kit creation and dissemination is depicted in Figure 1. In brief, module materials were curated by working groups composed of scientists and clinicians with expertise relative to the content and audience group, as well as expert practitioners such as university extension educators with extensive expertise in preparing materials for lay audiences (Table 1). These working groups were responsible for locating and vetting content for each week to ensure that materials were evidence-informed, aligned weekly with the Family Resilience Framework[7] elements, and supported programmatic goals. In addition to kit content, working groups created or identified evidence-informed experiential activities to offer families convenient ways to apply and practice new resilience skills through relatable exercises spanning multiple domains, such as parenting, education, psychological well-being, nutrition and food preparation, and financial well-being. For example, materials prepared for the theoretical element – sharing a positive outlook – included activities focused on recognizing and sharing gratitude.

Once working groups prepared initial drafts of content for each week, a steering committee reviewed all content and made final selections for each week's kit. After final selections were made, kit content was forwarded to an implementation team for editing, layout, and posting.

RESULTS

Implementation and assessment of the FT program

Both a Facebook page, and Facebook group, were established that included introductory information about the initiative. Group rules, which included requirements for courteous and supportive communication

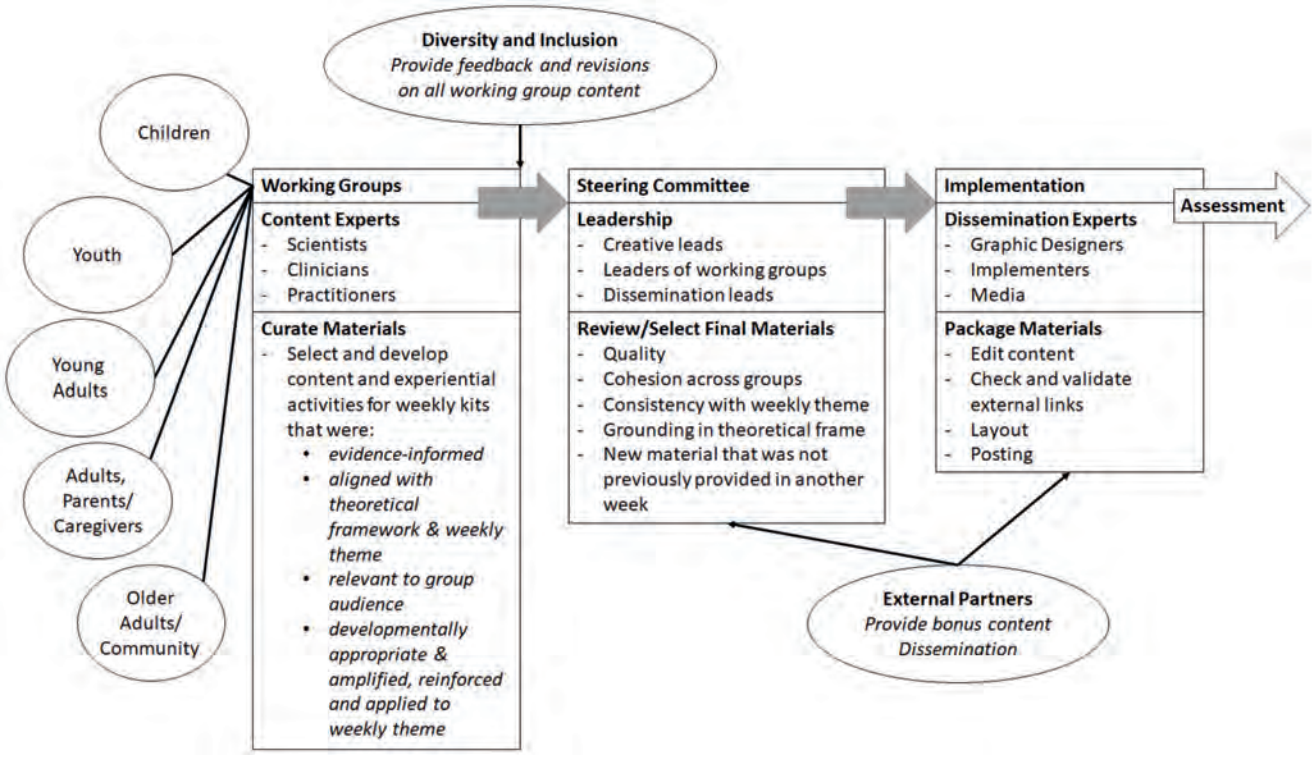

Figure 1. FT's weekly kit creation and dissemination process

FT = *Families Tackling Tough Times Together*.

and avoidance of politically or commercially-oriented behaviour, were posted. Families were invited to join the FT Facebook group[10] through social media accounts, announcements shared with personal and organizational contacts, and media outlets.

The implementation team also posted additional content aimed at emphasizing or elaborating kit content and encouraging members to engage with the Facebook group. Special engagement activities were posted on set days throughout the week so members would come to expect them. An interview with Froma Walsh, developer of the Family Resilience Framework, was released each Saturday to introduce the weekly theoretical element; kit materials were released on Sundays. On "Wellness Wednesdays," resources or specific questions about wellness-related topics were released. Additional activities and posts (approximately three per day) included introduction of experts who could answer questions from group members, videos and podcasts, community engagement activities, and excerpts of video-recorded interviews with families who had overcome serious challenges. For instance, one of the primary ways of promoting greater understanding between military and civilian families was through video-recorded interviews that were posted periodically in accordance with particular theoretical elements. For example, excerpts from interviews conducted by Dr. Steven Wilson, author of the Military-Civilian Divide Blog,[11] that featured military and civilian families talking about life challenges they had to overcome, were posted in weeks where their content aligned well with the weekly theoretical element.

Several strategies were implemented to evaluate the FT program. In addition to examining content posted by group members, Facebook analytics were monitored, which provided summaries of behaviour, such as joining the group, viewing, and responding to posts. Although attempts were made to have group members complete quantitative assessments of resilience, well-being, and COVID-19-related circumstances, this proved unsuccessful due to a variety of technical challenges. For example, it was not possible to send an individual message to each group member to invite them to complete the assessment. Moving forward, qualitative interviews will be conducted with FT program users, as well as individuals involved in creating the FT program, to understand involvement with, use of, and the impact of FT.

To date, 1,363 members from 25 countries have joined the Facebook group. Figure 2 summarizes metrics associated with the behaviour of group members to date. The number of members grew rapidly at the outset, and then at a slower rate in later weeks. On average, 34% of the members were active in any given week, meaning that they viewed or reacted to one or more posts. There were a total of 308 posts, 355 comments, and 2,437 reactions (e.g., likes, comments, shares) over the 10-week program period. The busiest days of the week in terms of user activity were Mondays, which immediately followed kit releases, and Wednesdays. The types of posts that generated the most reactions were "Wellness Wednesday" check-ins, where group members were asked to respond to questions such as how they were feeling that day or to share a positive change in their life that they hoped to sustain beyond the pandemic. Also popular were profiles of project partners that invited questions from group members, such as an expert in special education for young children. The single most popular post offered a quote from Froma Walsh, "In order to share the hard feelings, you also have to have times of fun and silliness" and invited group members to share their favourite animal photos.

DISCUSSION

FT was developed as a "pop-up" program produced through ultra-rapid development and deployment using volunteer scientists. While informed by scientific evidence, it has not been subjected to rigorous randomized controlled trials. If such a program were to be refined for use beyond the pandemic, thoughtful revisions and systematic testing should be completed.

In the urgency of the pandemic environment, the approach used here holds some appeal, relative to common alternatives. One set of alternatives is well-established evidence-based programs, such as parent training. While effective under typical circumstances, such programs were generally not designed to the circumstances of a pandemic (i.e., families unable to leave their homes, limited computer resources). Another set of alternative approaches comprised lists of resources, fact sheets, web pages, and webinar series tailored to the pandemic. While highly relevant, generally, these were not programmatic in design and thus could burden families with the work of assessing the relevance of the suggested resources.

FT was designed to be programming grounded in a particular theoretical perspective, but it was not intended to require families to use content in any particular sequence, or to have content released each week aimed

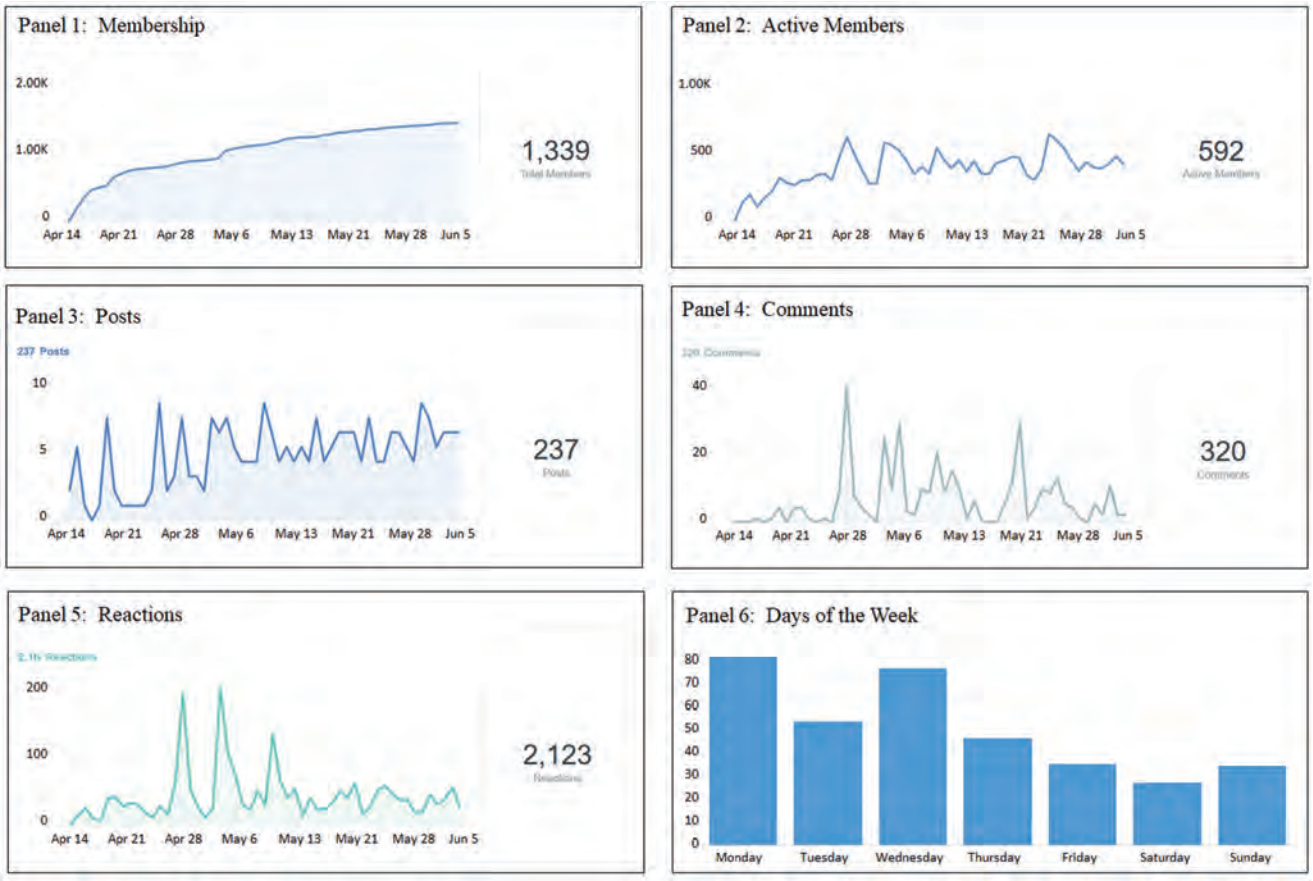

Figure 2. The FT Program metrics: behaviour on the FT Facebook group

FT = *Families Tackling Tough Times Together*.

to build on prior material. Ongoing research will reveal the degree to which such an approach was perceived as helpful and impactful.

Strengths and limitations

Strengths of this effort include rapid dissemination to families, tailoring to specific demands posed by the pandemic, grounding in a cohesive theoretical framework, a multidisciplinary approach, and attention to multiple target audiences within, and beyond, families. The public Facebook group offered easily accessible technology, with low barriers to entry for project builders, ease of "pushing" content to group members that could be read on multiple devices, ease of access for group members all over the world, and the ability for group members to exchange information with one another, as well as with group administrators.

Limitations, in addition to difficulties implementing survey assessments, included the inability to simultaneously build a companion website (thus limiting the audience), and difficulties encountered in drawing group members into conversations and mutual exchanges of support. While every post was viewed, and most were responded to in some way, these typically took the form of likes and, to a lesser extent, shares or comments, a substantial proportion of which came from individuals working on the initiative. Anecdotal evidence showed that the group reached an audience somewhat different than anticipated, specifically, an unexpectedly high proportion of intermediaries, including family support professionals looking for resources to help families they serve.

FUTURE DIRECTIONS

The FT initiative will continue, with the goal of helping families and the professionals who support them to address continuing challenges related to the pandemic. In the near term, the companion website will be completed, and a light cycle of themes will be provided via the Facebook group to correspond with summer school holidays in the northern hemisphere. Anticipating that restrictions may resume; plans are also being made for

the next academic year. Future refinements will aim to resolve challenges associated with assessment and engagement, as well as more strategically involving helping professionals as intermediaries who can use the initiative to support families. The use of other platforms will be explored, and poorly engaged content will be replaced.

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AUTHOR INFORMATION

Yumary Ruiz, PhD, MPH, is an Assistant Professor in the Department of Public Health at Purdue University. Her research examines how cognitive processes (e.g., attitudes, beliefs, and knowledge) and social factors (e.g., mobility) affect the health of vulnerable youth. Her work also aims to identify health-promoting mechanisms, such as social support (e.g., parents and providers) and individual characteristics (e.g., resilience and coping strategies), that can be targeted to mitigate the harmful effects of socioeconomic and health disparities.

Shelley M. MacDermid Wadsworth, PhD, is a Distinguished Professor in the Department of Human Development and Family Studies at Purdue University, where she directs the Military Family Research Institute, the Center for Families, and the Family Impact Institute. Her research focuses on relationships between job conditions and family life, with special focus on military families. She is a fellow of the National Council on Family Relations, and a recipient of the Work Life Legacy Award from the Families and Work Institute.

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COMPETING INTERESTS

None declared.

CONTRIBUTORS

Yumary Ruiz led the manuscript development and writing. Shelley M. MacDermid Wadsworth wrote the program design documents on which the manuscript is based, contributed to the manuscript writing, and constructed most of the supplementary information. Kristine Marceau drafted Figure 1. All authors revised the article for important intellectual content and approved the final version submitted for publication. Additionally, all authors were part of the steering committee; thus, they were all involved in the creation, design, and implementation of the project described.

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N/A

INFORMED CONSENT

N/A

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N/A

ANIMAL STUDIES

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PEER REVIEW

This article has been peer reviewed.

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Delivering rehabilitation services during the COVID-19 pandemic: How CAF Physiotherapy is using telehealth to ensure "physical and measurable solutions to maintain and enhance operational readiness, anywhere, anytime"

Eric Robitaille[a,b] and Marsha MacRae[a]

ABSTRACT

In response to COVID-19, the Canadian Armed Forces (CAF) activated Operation LASER, a force health protection strategy to preserve its operational capabilities. Operation LASER resulted in a quarantine of healthy CAF members to minimize the risk of contraction and transmission of COVID-19. The physical distancing inherent to quarantine challenged Canadian Forces Health Services to adapt its health care delivery. CAF Physiotherapy responded by integrating telehealth to maintain provision of essential primary health care services. A modified After-Action Report was used to capture preliminary telehealth experiences of Defence Team physiotherapists since the activation of Operation LASER. To date, seven Physiotherapy Officers and six civilian physiotherapists, have delivered a total of 196 assessments lasting an average of 45 minutes, and a total of 765 follow-ups lasting an average of 25 minutes. Most respondents reported no previous experience or formal training providing telehealth. Most respondents reported delivering telehealth by telephone and acknowledged challenges, including non-standardized patient instructions, inadequate equipment, unsuitable environments, and limited patient feedback. To maximize the quality of telehealth delivery, respondents recommended standardizing patient instructions, establishing suitable work environments, and using telephone headsets, videoconferencing, and digital exercise software. These recommendations are an investment in the capacity of CAF Physiotherapy to maintain rehabilitation services in the post-COVID-19 environment.

Key words: CAF, CAF Physiotherapy, Canadian Armed Forces, coronavirus, COVID-19, force health protection, military personnel, Operation LASER, pandemic, physiotherapy, rehabilitation, telehealth

RÉSUMÉ

En réponse à la COVID-19, les Forces armées canadiennes (FAC) ont activé l'Opération LASER, une stratégie de protection de la santé de la Force pour en préserver les capacités opérationnelles. L'Opération LASER a donné lieu à la mise en quarantaine de membres des FAC en bonne santé pour limiter le risque de contracter et de transmettre la COVID-19. La distanciation physique inhérente à la quarantaine a obligé les services de santé des Forces canadiennes à adapter la prestation des soins. Le service de physiothérapie des FAC a réagi en adoptant la télésanté pour maintenir la prestation de services essentiels de première ligne. Les chercheurs ont utilisé un rapport synthèse modifié pour saisir les expériences préliminaires des physiothérapeutes de l'équipe de la Défense en télésanté depuis l'Opération LASER. Jusqu'à présent, sept officiers en physiothérapie et six physiothérapeutes civils ont effectué un total de 196 évaluations d'une durée moyenne de 45 minutes et un total de 765 suivis d'une durée moyenne de 25 minutes. La plupart des répondants ont déclaré n'avoir aucune expérience antérieure ou formation professionnelle en télésanté. La plupart ont indiqué donner les services de télésanté par téléphone et ont reconnu les difficultés, y compris les directives non standardisées aux patients, l'équipement non approprié, les environnements non appropriés et la rétroaction limitée aux patients. Pour maximiser la qualité de la prestation des services de télésanté, les répondants ont recommandé de standardiser les directives aux patients, de choisir un environnement de travail approprié, de porter un casque d'écoute téléphonique, de privilégier la visioconférence et de recourir à un logiciel numérique d'exercices. Ces recommandations représentent

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un investissement dans la capacité du service de physiothérapie des FAC à maintenir les services de réadaptation dans l'environnement post-COVID-19.

Mots-clés : coronavirus, COVID-19, FAC, Forces armées canadiennes, Opération LASER, pandémie, personnel militaire, physiothérapie, physiothérapie des FAC, protection de la santé de la Force, réadaptation, télésante

INTRODUCTION

On March 11, 2020, the World Health Organization determined the novel coronavirus (COVID-19) outbreak was a global pandemic.[1] In response, on March 13, 2020, the Chief of Defence Staff activated Phase 3 of Operation LASER – the Canadian Armed Forces (CAF) contingency plan for the response to a pandemic of an influenza-like disease.[2] Phase 3 of Operation LASER included the implementation of force health protection measures to preserve CAF operational capabilities and readiness, and preparations to respond to requests for assistance from Canadian government departments and agencies. Part of the public health measures activated by force health protection included direction for CAF members to quarantine, a recognized strategy to sequester healthy, asymptomatic people, thereby minimizing their risk of contracting or transmitting COVID-19.[3] The physical distancing inherent to quarantine challenged the traditional face-to-face health services delivery method to CAF members. To ensure the maintenance of essential[4] primary care services to CAF members and uphold its motto, *militi succurrimus* (we succor the soldier),[5] CAF Health Services Group advised its health care providers to explore telehealth delivery within the context of their regulatory colleges, professional organizations, and National Defence security guidelines.

Telehealth may be defined as the provision of health care over distance using information and communication technology, delivered either in real time or asynchronously.[6] Telehealth may be used to overcome barriers of patient accessibility or transportability, provider availability, or specialty and austere or distant environments. However, telehealth is not always appropriate; it is crucial that providers determine the suitability and preparedness of their patients for this mode of health care delivery. In their timely review, Cottrell et al recommend several factors to assist providers in determining a patient's suitability for telehealth rehabilitation.[6] Table 1 summarizes these characteristics as best practices, according to the level of the patient, environment, and mode of telehealth delivery. Once providers determine the suitability of their patients for telehealth, several practical recommendations may facilitate their preparedness to deliver telehealth.[6] Table 2 summarizes these recommendations as best practices to assist providers and patients to prepare for telehealth delivery.

Table 1: Best practices to determine suitability for face-to-face or telehealth delivery

Face-to-face	Characteristic	Telehealth
Patient		
High	Acuity	Low
High	Age	Low
High	Barriers to recovery	Low
High	Comorbidities	Low
High	Language barrier	Low
High	Mobility barrier	Low
High	Sensory impairments	Low
Environment		
Low	Quiet	High
Low	Private	High
Low	Secure	High
Mode of delivery		
Low	Access	High
Low	Familiarity	High
Low	Support	High

Table 2: Best practices to prepare for telehealth delivery

Environment	Acoustic: minimize noise (low traffic area, soft furnishings, etc.)
	Physical: appropriate size for examination, equipped (bed/chair, equipment, mirror, telehealth mode access), private, secure
	Visual: minimize glare, neutral colours
Patient	Familiar with telehealth procedures; dressed appropriately (comfortable and plain); prepared for guided physical examination
Provider	Confirm patient identity; confirm private & secure environment; confirm informed consent; pre-test delivery mode; review adverse event plan

RATIONALE

Delivery of health care via telehealth offers a practical solution to the limitations imposed by physical

distancing requirements and travel restrictions. Telehealth offers additional value to military organizations where health care providers may deliver services from secure facilities to soldiers in their residences, on remote bases, or even in deployed environments. In 2000, NATO developed an expert panel to promote telehealth by its partner nations in recognition of its efficiency, and in line with its evolution toward multinational provision of medical support.[7] The NATO expert panel demonstrated the interoperability of telehealth during a multinational peacetime exercise in 2005 and as part of the International Security Assistance Force in Afghanistan in 2009.[8] The practicality of telehealth-delivered health care in deployed settings will likely prompt NATO partner nations to prioritize implementation strategies in response to the COVID-19 pandemic.

EVIDENCE BASE

Several studies have investigated the effectiveness of providing rehabilitation via telehealth. In their systematic review of 11 studies, Mani et al[9] reported that physiotherapy assessments delivered via telehealth were feasible, showing excellent reliability and good validity apart from complex examination techniques such as nerve tension tests or special orthopedic tests. Cottrell et al[10] reported that rehabilitation interventions provided via telehealth provided similar improvements in pain and function to those delivered face-to-face in their systematic review of 13 studies. Furthermore, patient satisfaction following telehealth rehabilitation has been reported as similar to, or better than, that delivered face-to-face.[6] Most of the studies in these reviews reported using telehealth delivered via videoconferencing; however, telehealth delivered via telephone has also been shown to provide similar clinical effectiveness to usual care.[11] Furthermore, while the participants in most of these studies were civilians, the effectiveness of telehealth rehabilitation has been shown in military populations, both in garrison and deployed settings.[7]

PRELIMINARY RESULTS

While the implementation of telehealth has experienced challenges secondary to patient, provider and organizational barriers, provider-related factors are considered the primary determinant of successful implementation.[6] Investigation into provider-specific barriers to telehealth may provide the most efficient means of implementing this topical mode of health care delivery. To ensure their contribution to providing essential primary health care services to CAF members and uphold their motto, "Physical and measurable solutions to maintain and enhance operational readiness, anywhere, anytime." Defence Team physiotherapists integrated telehealth delivery of rehabilitation in response to Phase 3 of Operation LASER. In this context, we explore lessons learned to date, and conclude with recommendations as Canadian Forces Health Services Group adapts health care delivery expectations post COVID-19.

Defence Team civilian physiotherapists and Physiotherapy Officers who were involved in regularly providing telehealth during Operation LASER were invited to voluntarily complete a modified After-Action Report to be summarized for this article. After-Action Reports are routinely requested by the CAF Physiotherapy National Practice Leader following a Physiotherapy Officer's participation in deployments, training or novel roles, in order to share any lessons learned, and provide recommendations to enhance the operational experience of successive participants. The After-Action Report was modified to facilitate completion by civilian Defence Team members and was divided into planning, delivery and evaluation sections (see Supplementary Appendix 1). A pilot of the modified After-Action Report was completed by having one military and one civilian Defence Team member review the document. Minor revisions were made to facilitate understanding. The CAF Physiotherapy National Practice Leader approved the final modified After-Action Report.

Seven CAF Physiotherapy Officers and six civilian physiotherapists completed the modified After-Action Report, with representation from five CAF bases (Borden, Edmonton, Kingston, Trenton, and Petawawa). Since the activation of Operation LASER, these 13 Defence Team physiotherapists reported a total of 196 telehealth assessments lasting a mean of 45 (20–60) minutes, and a total 765 telehealth follow-ups lasting a mean of 25 (10–40) minutes.

Two respondents reported previous experience providing telehealth, one to CAF athletes, and one in a civilian setting. Two respondents reported participating in a formal telehealth training course. Six respondents reported reviewing telehealth guidelines provided by their national professional organization and provincial regulatory colleges,[12] while three used peer discussions and Internet resources to prepare for telehealth delivery. One respondent questioned the need for formal telehealth training, while three respondents recommended that Defence Team members, or Team Leaders, should

have formal telehealth training in order to mentor staff. All respondents reported obtaining informed consent for telehealth rehabilitation, and most used the Canadian Forces Health Services Group virtual consent form (Consent for Virtual Care – AIG – Deputy Surgeon General version 02/20). Nine respondents reported sending patients instructions to familiarize them with telehealth procedures, and four thought these instructions could be added to the virtual consent form for efficiency.

There were no adverse events reported by respondents throughout their telehealth delivery. Nine respondents reported delivering telehealth in unsuitable environments, describing distracting home environments or shared charting areas common to CAF Physiotherapy Sections, where physiotherapists are seated directly adjacent to one another. Three respondents reported making use of the intermittent low staff volumes in their CAF Health Services Centres by temporarily relocating to a colleague's unoccupied office to deliver telehealth. Eleven respondents provided telehealth rehabilitation using telephones, while two respondents reported intermittent access to videoconferencing software. Seven respondents reported requiring technical support to offer telehealth by telephone, with the most frequent request being a headset to facilitate concurrent charting. All respondents reported being challenged by telephone delivery of telehealth due to a lack of visual feedback, describing notable difficulty attempting to explain to a patient how to complete guided physical examination procedures and prescribed exercises. All respondents recommended obtaining videoconferencing software and seven respondents recommended obtaining digital exercise software to minimize this visual barrier to optimal telehealth rehabilitation delivery. Six respondents recommended providing patients with visual and written instructions to familiarize them with guided physical examination procedures that would be used in their telehealth appointments.

Eleven respondents reported patient challenges with telehealth rehabilitation, including low motivation due to their expectation for hands-on care, difficulty understanding and correctly performing exercises, and a lack of privacy due to the inability to secure a suitable location at work or home. Five respondents reported that telehealth rehabilitation delivery challenged their preference toward providing passive hands-on care to members and so they developed their capacity in counselling members toward active self-management. Nine respondents reported being challenged to effectively perform their duties using telehealth rehabilitation, reiterating the lack of patient visual feedback, and their own proprioceptive feedback from hands-on care. Seven respondents emphasized the use of education, and a conservative approach to exercise prescription to avoid adverse events.

When asked what resources would enable them to effectively perform their duties, respondents most commonly reported: a work environment suitable for telehealth delivery, telephone headsets, videoconferencing software, digital exercise software, and access to the CAF electronic medical records on National Defence information technology equipment that enables flexible work arrangements. Nine respondents acknowledged that a hybrid of telehealth rehabilitation service delivery would be crucial throughout, and following, Operation LASER.

RECOMMENDATIONS

Based on these preliminary results, the following recommendations may facilitate telehealth rehabilitation by CAF Physiotherapy Defence Team members.

Preparation

- Coordinate formal training in telehealth delivery. Key elements that supervisors may consider include best practice recommendations in business case development, including a relevant implementation framework;[6] equipment and related infrastructure requirements; conducive work environment layouts; proposed scheduling modifications, and delivery resources. Key elements that clinicians may consider include best practice recommendations in determining patient suitability for telehealth; preparing patients to participate in telehealth with standardized instructions; effective communication strategies using telephone or videoconferencing; and hybrid service delivery options.
- Prepare dedicated work environments conducive to delivering telehealth rehabilitation services. Current CAF Physiotherapy Section layouts have a minimum of one to two private, secure office spaces with access to information technology equipment that may only require minor modifications to meet the best practices outlined in Table 2. To promote sustainability, future layouts may consider planning additional telehealth-appropriate spaces based upon a related needs analysis. In the interim, respondents reported some

success coordinating use of temporarily unoccupied office spaces during periods of low patient flow in their respective CAF Health Services Centres.

- Prepare standardized patient instructions for telehealth rehabilitation. Such instructions should consider best practice recommendations for appropriate environment; appropriate dress; obtaining alternate and emergency contact information; expectations for active participation in a guided physical examination; and strategies to promote self-efficacy in prescribed therapeutic exercise.

Delivery

- Provide equipment for telehealth, such as telephone headsets to facilitate concurrent documentation and portable National Defence information technology equipment with access to the CAF electronic medical records, videoconferencing software, and digital exercise software to enable efficient and flexible work arrangements.
- Explore hybrid delivery models. Physiotherapists may elect to assess patients using a face-to-face appointment to ensure an effective assessment and develop a strong therapeutic alliance, then use telehealth appointments to monitor treatment responses and progress exercise parameters as required. Alternatively, procuring portable National Defence information technology equipment, as previously described, would enable Defence Team physiotherapists the flexibility to deliver rehabilitation services from alternate work sites during non-traditional times in order to maintain continuity of care to CAF members in their various work sites, including domestic taskings or international deployments.

CONCLUSION

Telehealth is an emerging method of health care delivery that offers a practical solution to the limitations imposed by physical distancing, travel restrictions, and public health measures secondary to COVID-19. Telehealth offers additional value to military organizations where health care providers may deliver services from secure facilities to soldiers in their residences, on remote bases, or in deployed environments. This article summarizes known best practices for providers to determine the suitability of patients for telehealth, and to prepare for telehealth delivery. It then offers preliminary results and recommendations from Defence Team physiotherapists with experience offering telehealth rehabilitation since the activation of Phase 3 of Operation LASER.

While we acknowledge the practical recommendations made by respondents may incur administrative and financial costs, they agree with respondents' suggestions that a hybrid of telehealth rehabilitation service delivery will be crucial throughout, and following, Operation LASER. The expectation of multidisciplinary rehabilitation in COVID-19 survivors[13] further emphasizes the necessity of resources to facilitate telehealth services. Given the unique need for Defence Team physiotherapists to have synchronous visual patient interactions and flexible work arrangements, these resources should be seen not as a short-term response to COVID-19, but as a long-term investment in their capacity to meet their motto, "Physical and measurable solutions to maintain and enhance operational readiness, anywhere, anytime."

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COMPETING INTERESTS

None declared.

CONTRIBUTORS

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System-wide implementation of telehealth to support military Veterans and their families in response to COVID-19: A paradigm shift

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ABSTRACT

The need for the expansion of telehealth services in behavioural health care existed long before the COVID-19 pandemic. Yet, for a variety of reasons – including technological costs, reluctance of behavioural care providers to adapt telehealth to their practices, privacy concerns, and client aversion to receiving care remotely, among many others– telehealth has not been widely implemented. However, the COVID-19 crisis, and the accompanying social isolation that ensued, necessitated either a swift transition to telehealth delivery of behavioural health care, the termination of behavioural health care, or the clinician continuing to meet face-to-face with clients, placing both the clinician and the client at increased risk of infection. Shifting behavioural health care to a telehealth platform seemed the most sensible and, quite candidly, the only option, although many clinics still operate employing the face-to-face modality. In this article, we describe how an emerging national behavioural health care network, Cohen Veterans Network (CVN) in the United States, rapidly and relatively seamlessly transitioned to a full-service, virtual network of outpatient behavioural health clinics when faced with a national crisis.

Key words: behavioural health care, Cohen Veterans Network, COVID-19, military, pandemic, stay-at-home, telehealth, telehealth delivery, Veterans

RÉSUMÉ

Il était nécessaire d'accroître les services de télésanté en soins comportementaux bien avant la pandémie de COVID-19. En fait, pour diverses raisons, y compris les coûts technologiques, la répugnance des dispensateurs de soins comportementaux à adapter la télésanté à leurs pratiques, leurs inquiétudes en matière de confidentialité et l'aversion de leurs clients à recevoir des soins à distance, entre autres, ces services ne se sont pas généralisés. La crise de la COVID-19 et l'isolement social qui en a découlé ont toutefois dû se traduire soit par une transition rapide vers des services de télésanté en soins comportementaux, soit par l'arrêt des soins comportementaux, soit par le maintien des rencontres physiques avec les clients, accroissant le risque d'infection à la fois pour le client et le clinicien. La transition des soins comportementaux vers une plateforme de télésanté semblait l'option la plus logique, et bien franchement, la seule, même si de nombreuses cliniques ont poursuivi les rencontres physiques.

Dans le présent article, les auteurs décrivent la transformation rapide et relativement harmonieuse du *Cohen Veterans Network*, un nouveau réseau de santé comportemental national des États-Unis, en un réseau virtuel complet de cliniques de santé comportementales ambulatoires pour s'adapter à une crise nationale.

Mots-clés : à distance, Cohen Veterans Network, COVID-19, militaires, pandémie, services de télésanté, soins comportementaux, télésanté, vétérans

INTRODUCTION

Prior to the COVID-19 pandemic, less than 5% of Americans received any type of health care through telehealth, despite, in many cases, the technology being readily available.[1,2] However, since the COVID-19 pandemic, approximately 25% have received some form of telehealth service.[3] The reasons for this relatively slow and low use of telehealth are numerous, including (among

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others) legal and policy issues surrounding health care reimbursement, privacy concerns, and clients' and clinicians' beliefs that telehealth was either not necessary or would not be effective.

The use of telehealth to provide behavioural health care has been well documented, especially for the treatment of posttraumatic stress disorder (PTSD) and depression,[3,4] and during the current COVID-19 pandemic, telehealth has been rapidly expanded to treating substance use disorder.[5] While the use of telehealth in treating these mental and behavioural health disorders is impressive, its use in the treatment of schizophrenia, suicide, and other more serious mental health issues remains promising.[6,7] The use of telehealth to prescribe controlled medications in the treatment of mental and behavioural health disorders is lacking.[5] In this article, we describe how a national, non-profit behavioural health system rapidly addressed many of the concerns that hindered the wide use of telehealth prior to the COVID-19 pandemic.

COHEN VETERANS NETWORK (CVN)

Cohen Veterans Network (CVN) was founded in 2015 by the Steven and Alexandra Cohen Foundation. Its mission is to improve the quality of life for post-9/11 Veterans and their families, including National Guard and Reserves, by working to strengthen mental health outcomes. The focus of CVN is ensuring ready access to high-quality, evidence-based care through a national network of Steven A. Cohen Military Family Clinics. In less than 4 years, CVN has established 15 outpatient clinics in 11 states, providing behavioural health care to over 15,500 Veterans and their families (Figure 1). The CVN clinics treat the entire military family, with 47% of all clients being family members, including spouses or partners, children, parents, siblings, caretakers, and others.

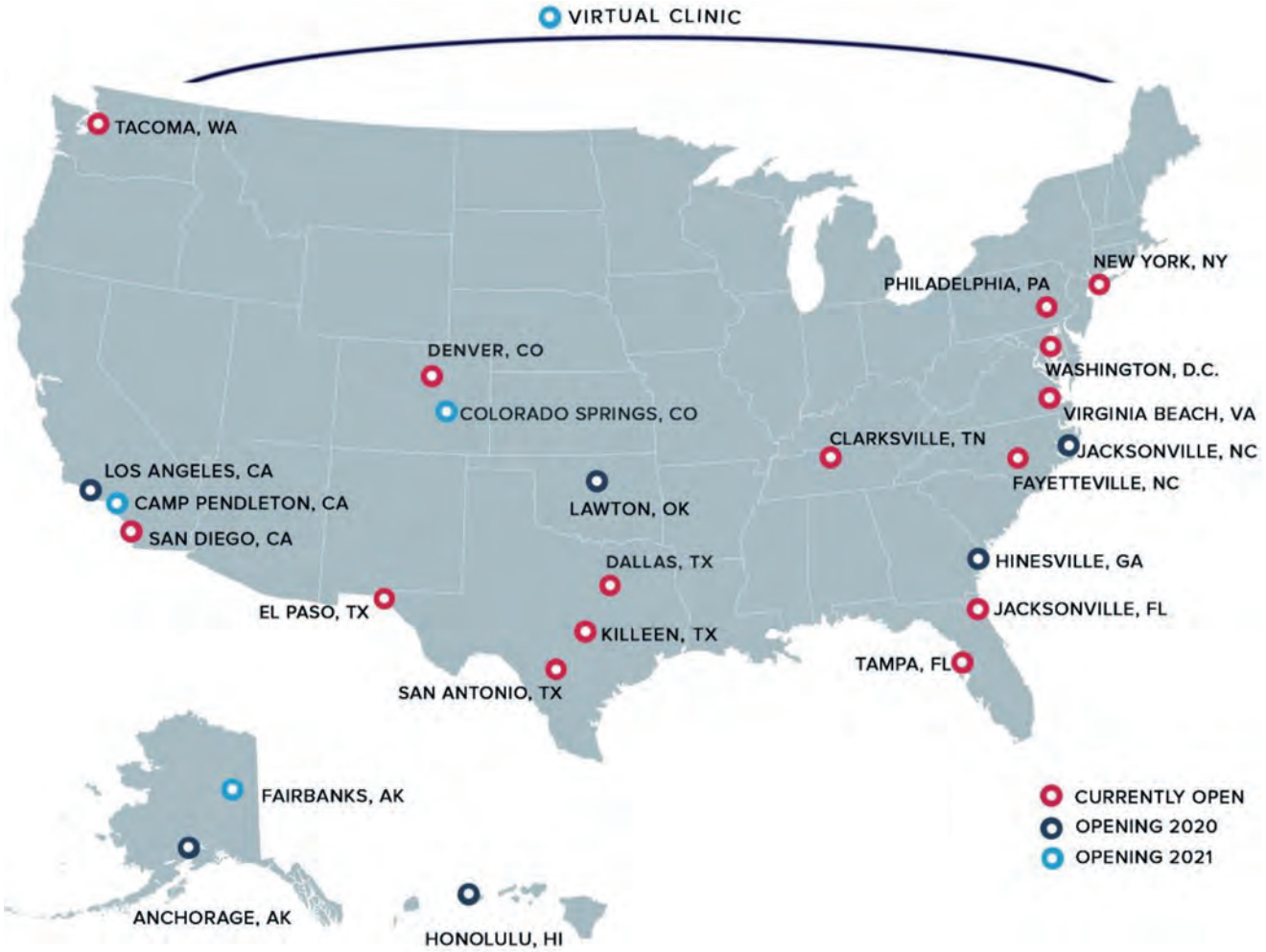

Figure 1: Current and future CVN clinics as of April 2020

CVN = Cohen Veterans Network

The framework for CVN's outpatient mental health care model is time-limited, targeted treatment grounded in best available research evidence.[3,4] The CVN scope of services includes clinical assessment; psychotherapy for individuals, couples, and families; and pediatric psychotherapy. Each clinic also provides a variety of therapy groups, some offered virtually as of 2019.

In order to deliver this specific model of care, CVN operates as a centralized network with key best practices identified and standardized across the network, including the following.

- **Reduced barriers to care.** Access to care is a primary goal for CVN, and funding and infrastructure are provided to reduce several functional barriers. Transportation reimbursement, ride sharing services, and onsite child care are provided to clients where available. Telehealth is routinely offered to all clients, particularly those who have challenges with attending in-person services.
- **Technology infrastructure.** All CVN clinics are outfitted with a robust technology infrastructure that includes, but is not limited to, a centralized electronic health record system that feeds into a data analytics warehouse, a telehealth and videoconferencing platform, a private online instant messaging system, a secure document exchange platform, access to the central learning management system, and a central technical support ticketing system. Laptops with videoconferencing capabilities are standard equipment for all clinics. During new clinic onboarding, all clinic staff are trained in the various systems and are required to build and test standard operating procedures, such as applying standardized crisis communications processes using the electronic messaging system.

RESPONDING TO THE COVID-19 CRISIS

CVN is still in the process of establishing partnerships with community organizations and building new clinics. However, when faced with the rapid onset of the COVID-19 crisis in 2020, the network's transition from face-to-face clinical support to full remote care was swift.[5] At the end of 2019, before the magnitude of the COVID-19 crisis was widely appreciated, the adoption of telehealth across CVN was around 17%. Clinicians had received training and support around use of telehealth as an evidence-based practice.[6–9] Table 1 shows the number of clinic-based and telehealth-based hours of service provided one week prior to the issuing of the national "stay-at-home" orders in the United States, and the two weeks following the "stay-at-home" order. As can be seen, the percentage of telehealth hours provided by each clinic prior to the "stay-at-home" order varied, ranging from a high of 34% for the clinic in Denver, Colorado, to a low of 2% for the clinic in Fayetteville, North Carolina. However, within two weeks of the "stay-at-home" order, the percentage of hours of services increased for every clinic to 86% or higher, except for the clinic in Fayetteville, where telehealth services increased from 2% to 24%.

On March 11, 2020, the CVN central office sent a notice recommending all clinics begin transitioning their clients to telehealth, with the assumption that this would be a gradual process. However, with the rapidly escalating public health crisis, in just over two weeks, 14 out of 15 clinics were offering telehealth services exclusively. How services were delivered differed by clinic, and the timing of the transition varied, driven by factors such as escalating shelter-in-place directives issued by local and state authorities.

In spite of variability across the host organizations, CVN achieved greater than 90% conversion rate of all clinical services to telehealth, with over 2,200 clinical sessions being conducted remotely by March 30, 2020 (see Figure 2). This was not simply a transition of providers offering telehealth sessions instead of in-person sessions; the entire network, in essence, shifted from one mode of service delivery to another. This included maintaining the integrity of all core functions identified as essential to the network, including community operations, administrative support, and operational guidance. In order to assess how ready each clinic was to transition to fully remote operations, the central office rapidly conducted individual readiness assessments with each clinic director. Based on these assessments, the central office was able to ascertain where additional supports were needed (e.g., increased technology troubleshooting). At the same time, the central office also developed a template that required each clinic to detail technological, operational, and clinical processes and requirements across all business lines. Because each clinic was already undergoing significant change and challenges with staffing, prevention, and preparation for the impact of the virus, the CVN central office provided real-time support in drafting clinic-specific standard operating procedures (SOPs).

FACILITATORS OF RAPID TRANSITION

Telehealth may be viewed as a set of processes and assets (primarily infrastructure).[10] In the early phase of

Table 1: Locations of CVN clinics and case/workloads

Clinic	Week ending Year-Month-Day	Clinical hours No.	Telehealth hours No.	Telehealth hours %
Clarksville, TN	2020-03-13	180	14	8
	2020-03-20	147	77	52
	2020-03-27	162	139	86
Dallas, TX	2020-03-13	118	30	25
	2020-03-20	109	80	73
	2020-03-27	121	116	96
Denver, CO	2020-03-13	93	32	34
	2020-03-20	72	54	75
	2020-03-27	76	76	100
El Paso, TX	2020-03-13	150	10	7
	2020-03-20	43	19	44
	2020-03-27	79	76	96
Fayetteville, NC	2020-03-13	101	2	2
	2020-03-20	96	3	3
	2020-03-27	101	24	24
Killeen, TX	2020-03-13	110	8	7
	2020-03-20	90	38	42
	2020-03-27	83	80	96
Norfolk, VA	2020-03-13	78	6	8
	2020-03-20	46	18	39
	2020-03-27	67	64	96
Philadelphia, PA	2020-03-13	102	20	20
	2020-03-20	114	86	75
	2020-03-27	117	114	97
San Antonio, TX	2020-03-13	188	20	11
	2020-03-20	113	65	58
	2020-03-27	166	162	98
San Diego, CA	2020-03-13	81	12	15
	2020-03-20	78	46	59
	2020-03-27	82	80	98
Silver Spring, MD	2020-03-13	96	31	32
	2020-03-20	79	57	72
	2020-03-27	67	67	100
Tacoma, WA	2020-03-13	131	24	18
	2020-03-20	149	95	64
	2020-03-27	186	186	100
Tampa, FL	2020-03-13	51	12	24
	2020-03-20	31	12	39
	2020-03-27	54	52	96

CVN = Cohen Veterans Network.

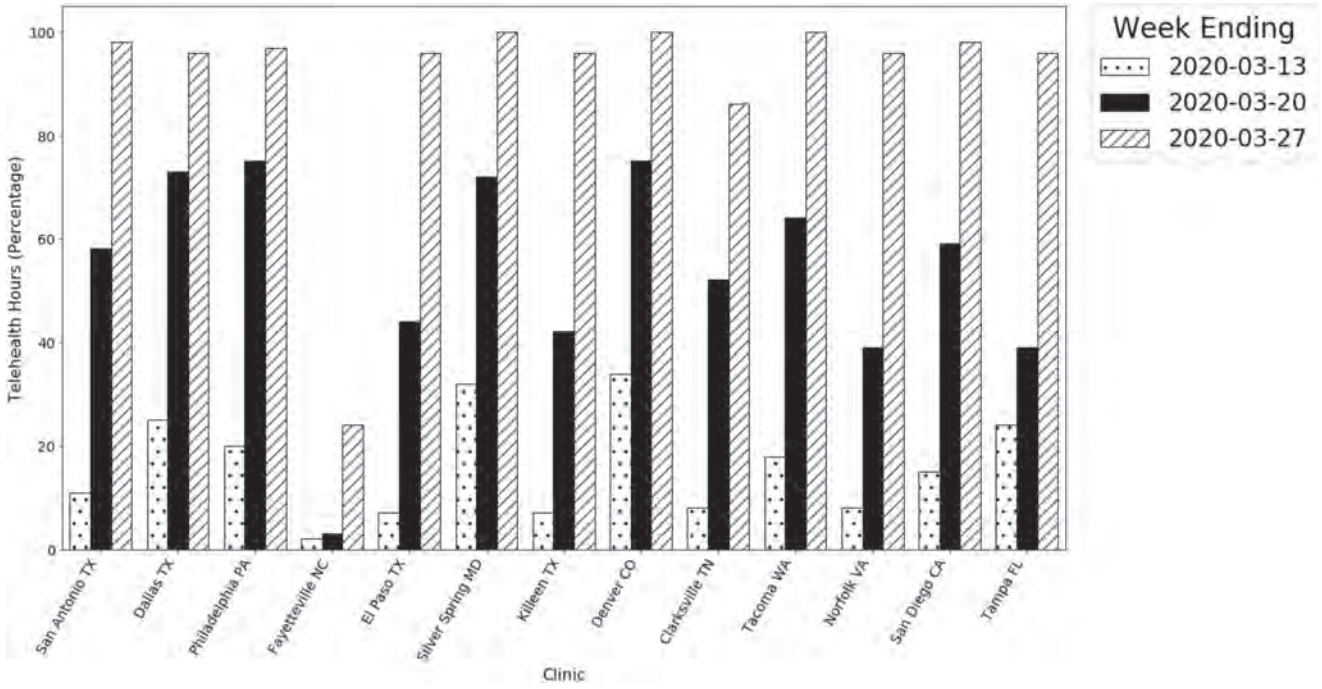

Figure 2: Change in telehealth usage over time, by CVN clinic

CVN = Cohen Veterans Network

the network, CVN highly encouraged clinics to learn how to deliver all services via telehealth. Clinics were given flexibility on what processes to use, what technology to leverage, and when to deploy the capabilities they developed. This initial approach was taken, in part, to recognize each clinic already had a culture and set of local procedures for how to conduct business. This soft touch approach did not achieve the desired outcome of widespread integration of telehealth. Clinical data from CVN suggested reluctance in the early use of telehealth and slow development of key clinical and non-clinical procedures. In short, clinic leadership, clinicians, and clients did not find telehealth compelling enough to put the effort into becoming proficient at it. Clients were happy to receive clinical care and support in person and clinicians were happy to deliver those services in person. A cultural change at the clinic level was needed if CVN was to achieve its vision of a multi-modal system of delivering behavioural health care.

Fortunately, this cultural change began prior to the COVID-19 crisis, with the CVN central office providing coordinated support among all its clinics. First, the central office assumed ownership of all necessary licences to the telehealth and secure document sharing platforms. This eliminated variation in how the platforms were used and allowed for administrative oversight by the central office. Second, the central office required key clinical and non-clinical staff become proficient in the use of telehealth, ensuring that all services provided could be delivered remotely. Third, operational testing of telehealth capabilities was mandated and evaluated. Finally, the use of telehealth was tracked as an outcome metric. Working with clinic staff and clinicians, a cultural change, albeit gradual, started to take place.

Despite these efforts, widespread usage of telehealth remained relatively slow until the COVID-19 public health crisis. The pandemic-driven shutdown of in-person services created the incentive for system-wide adoption of telehealth; however, without the CVN central office fostering and reinforcing a culture of telehealth, its adoption would not have been possible. As it stands, all CVN clinics were ready when the transition became necessary.

BARRIERS DURING THE TELEHEALTH TRANSITION

Not surprisingly, there were barriers encountered during the transition and lessons learned.[11,12,13] Immediate planning and execution was necessary for a rapid transition, but it was unclear if the solutions needed would be short-, medium-, or long-term. Despite having a robust technological infrastructure and policies

in place, they had been developed to support a modest percentage of clients and providers in the context of a brick-and-mortar health care system. These policies did not account for significant numbers of staff and clients who might not have technology in place. Some clinics lacked a sufficient number of laptops for the clinicians and non-clinical staff, and these had to be rapidly procured – a particular challenge, as demand for computer hardware spiked across the country as result of the pandemic. Some clinicians reside in rural locations where the bandwidth was insufficient for telehealth. For these clinicians, signal boosters had to be purchased.

Additionally, clinic staff face the same challenges as the general public – their children and family members are also at home managing complexities of care duties and lack of private space. Some have household members working in essential services who have to be isolated from the rest of the household. The magnitude of change was significant, with personal, professional, social, emotional, economic, and health factors to balance.

Finally, some clinics saw resistance among clients who did not want to receive behavioural health care or support via telehealth. Some clients opted instead to wait indefinitely for services to return to normal, rather than take the "easier" option of telehealth. For these clients, telehealth does not completely satisfy their needs. As it is the right of the client to select the modality of care they prefer, if telehealth becomes the new paradigm for the delivery of behavioural health care and services, innovative solutions will be required to ensure Veterans and their families receive the care and support they deserve.

Without having conducted a retrospective analysis due to the ongoing nature of the pandemic, some of the initial lessons learned will help inform expansion of telehealth programming in the future.

- **Considering context**. Telehealth policies and procedures for individual clients in isolated instances may not easily convert to system-wide practice support. Everything from crisis management and general administration changes when all participants are operating remotely. Leaders developing policies and procedures should understand contextual variables may require different approaches and plan accordingly.
- **Telehealth champions**. Because federal, state, and local laws can create significant confusion when supporting a client base beyond a single state, having a navigator or champion who is consistently dedicated to tracking these changes allows for more rapid and confident support of a diffuse population.

DISCUSSION

Telehealth has historically been deployed during disaster,[14] but the scope of the COVID-19 pandemic is unique. This was not a localized rollout with a determinable timeframe. This is an urgent and sustained expansion of services across the spectrum of medical care that will have a lasting impact on health care delivery across the nation. What that impact will be in the long-term remains to be seen, but many providers see reason for optimism that the changes brought forth from the COVID-19 pandemic will be positive. This is, in part, because of the exercise currently under way to test the reach and feasibility of telehealth in an unprecedented way. Significant limitations that previously constrained expansion of telehealth are currently being suspended or lightened. This includes the Ryan Haight Online Pharmacy Consumer Protection Act of 2008, a restrictive policy intended to regulate the prescription of controlled substances over telehealth that has been the subject of numerous challenges and efforts to change by American psychiatrists.[15] CMS requirements for reimbursement, which previously limited reimbursement based on provider/client location, have been lifted. Many states have lifted licensure requirements that previously limited an individual's ability to receive telehealth services from providers in non-approved geographic areas.[16] The Department of Health and Human Services has formally adopted a new enforcement standard for the Health Insurance Privacy and Portability Act during the COVID-19 pandemic that will waive fines for providers operating in good faith to support clients via remote communications technologies.[17]

Conclusion

Early investment and preparation were key in helping the CVN network adapt quickly to the COVID-19 crisis. It is also important to note that the funding provided by the Steven and Alexandra Cohen Foundation allowed CVN to invest in building a robust telehealth platform before it could be proven to be financially sustainable and applicable in providing care and services to all clients, such as children and the seriously ill. In the U.S., insurance reimbursement for telehealth services has been historically low, and organizations that rely primarily on this revenue stream may not have the ability to invest in building and growing their telehealth

infrastructure if the lost revenue cannot be readily replaced.[18] It remains to be seen how behavioural health care will be changed in the long term by the modifications made in response to the current COVID-19 crisis. It may be that telehealth has become the preferred mode of therapy for a large segment of the population. At the very least, it seems unlikely the demand for telehealth services will subside to the low levels seen before the pandemic. Further careful research is needed to determine user satisfaction with telehealth services, from both the client and clinician perspective, in order to maximize efficiency, effectiveness and continued use. The goal will be to anticipate the next paradigm shift that is likely to occur in order to ensure there are no breaks in needed behavioural health services during times of crisis.

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COMPETING INTERESTS

None declared.

CONTRIBUTORS

Crystal J. Shelton, Alice Kim, and Carl A. Castro conceived and drafted the initial report. All authors collaboratively assembled data, contributed to the interpretation of the findings, and revised the final version for publication.

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This article has been peer reviewed.

SNAPSHOTS

Photos clockwise from top left: Brig.-Gen. Michel-Henri St-Louis, Joint Task Force IMPACT Commander, right, bids farewell to members whose deployment on Op IMPACT ended, at Abdullah Al-Mubarak Air Base, Kuwait, on Apr. 11, 2020. *Photo by Cpl. Nicolas Alonso/Op IMPACT ©2020 DND-MDN Canada*; Bombardier Draysen Foreman is reflected in the mirror of his vehicle, May 6, 2020, during Exercise Strong Drive. The day-long exercise allowed soldiers to hone their convoy driving and communication skills in a COVID-19 environment. Foreman is a Nanaimo-based member of the 5th (British Columbia) Field Artillery Regiment, a Canadian Army Reserve unit, and part of Land Task Force Vancouver Island's Domestic Response Company. *Photo by Capt. Jeff Manney/39 Canadian Brigade Group Public Affairs*; A member of the 4th Battalion, Royal 22nd Regiment, disinfects a bed at the Yvon Brunet long-term care facility in Verdun, QC, on May 14, 2020, as part of Operation LASER. *Photo by Cpl. Genevieve Beaulieu/Valcartier Imagery Section*; A blind, deaf, mute survivor of COVID-19 living at Cartierville Long-Term Care Centre in Laval, QC, touches the Canadian flag of Maj. Simon Godin, right, during a June 11, 2020, departure ceremony for military personnel involved in Operation LASER. *Photo by Aviator Zamir Muminiar/2nd Canadian Division Imagery*; Capt. Isabelle Dubé, Nursing Officer with 41 Canadian Forces Health Services Centre, provides medication to a resident at Ste. Anne's Hospital in Montreal, QC, on May 15, 2020, as part of Operation LASER. *Photo by Cpl. Genevieve Beaulieu/Valcartier Imagery Section*; Canadian Ranger MCpl. Rosalie Kkailther of the Wollaston Lake Canadian Ranger Patrol in northern Saskatchewan catches fish Apr. 22, 2020, to assist with the community's food security as part of Operation LASER COVID-19 relief efforts. *Photo by Canadian Ranger Sgt. Jean Tsannie/Wollaston Lake Canadian Ranger Patrol*

Photos clockwise from top left: Cpl. Morgan Gamborski, right, a medical technician, assesses quarantined personnel for symptoms of COVID-19 at Ali Al Salem Air Base, Kuwait, on Mar. 25, 2020. The medical team put in place a number of measures to help protect Canadians deployed on Operation IMPACT, including periodic monitoring of personnel who recently arrived in, or returned to, the theatre of operations. *Photo by Cpl. Nicolas Alonso/Op IMPACT ©2020 DND-MDN Canada*; Capt. Kelsey Penney, a reservist with 1 Canadian Field Hospital and critical care flight nurse for STARS Winnipeg, is shown on the Health Sciences Centre Winnipeg helipad at sunrise after a full night of flying during the height of the 2020 COVID-19 outbreak in Manitoba. *Photo provided by Capt. Kelsey Penney/38 Canadian Brigade Group*; Parachute rigger Cpl. Marc Dumaine, of the SkyHawks military parachute demonstration team, put his sewing skills to good use during the 2020 COVID-19 pandemic to make non-medical face coverings for fellow Canadian Armed Forces members working in low-risk environments. *Photo by Cpl. CJ Hietanen/The SkyHawks*; Members of the Canadian Armed Forces medical team deployed to Japan in April 2020, as part of Operation GLOBE to provide assistance to repatriate 129 Canadians from the Diamond Princess cruise ship. From left are: Lt-.Col. Ross Semeniuk, Capt. Chris Goulet, Lt.-Cmdr. Jeff Praught, Capt. Kathryn Brett, Lt.-Col. Anna Grodecki and Lieut. Ryan Henderson. *Photo by David Bostwick/Canadian Embassy, Japan*; Commander of 437 Transport Squadron, Lt.-Col. Eric Willrich, centre, found an unconventional way to engage in a socially distant handshake with Royal Canadian Air Force pilot, Maj. Devon Julian, left, during a surprise promotion ceremony at Julian's home in June 2020. Assisting Lt.-Col. Willrich with the ceremony is Chief Warrant Officer John Nichols, right. *Photo provided by Julian family*; Citizens and family members display signs and hold balloons outside Orchard Villa Long Term Care in Ontario on May 5, 2020, to thank soldiers and health care staff in their work to flatten the curve of COVID-19. *Photo by Master Corporal Tyler Benedet/2 Military Police Regiment ©2020 DND-MND Canada*

Soldiering on only goes so far: How a qualitative study on Veteran loneliness in New Zealand influenced that support during COVID-19 lockdown

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ABSTRACT

Introduction: On April 25, 2020, Veterans' Affairs in New Zealand (NZ) contacted approximately 3,000 of 8,000 known military Veterans by phone during the SARS-CoV-2 pandemic to ensure they were safe during the government-imposed lockdown. The impetus to this initiative were the findings of a cross-sectional quantitative survey of NZ Veterans, followed by the qualitative survey reported here, both carried out in 2019. The former report found 33% of 89 respondents were lonely and reported barriers to seeking support, and over half of Veterans felt uncomfortable accessing it. **Methods:** To understand the factors underlying loneliness, a qualitative survey was developed based on the barriers previously identified and a literature review. A purposeful sample based on gender, age, and ethnicity identified 20 respondents from the initial survey: 10 lonely and 10 non-lonely. Interviews were followed by an inductive thematic analysis, and themes and sub-themes were developed. **Results:** Ten of the 20 potential participants responded: 6 lonely and 4 non-lonely. Social and geographic isolation, problems with re-integration into the civilian community, and health problems were found to contribute to Veteran loneliness. Social connectedness, particularly to service peers, was the primary mitigating factor. Barriers included stoicism and perceptions of ineffective and inaccessible services. Inequity in the Veteran support system also emerged as a barrier for Veterans who had not deployed on operational missions. **Discussion:** During the pandemic, social connectedness will have decreased, and loneliness increased. Designing interventions with these factors in mind, and ensuring equity of access to support, should help combat Veteran loneliness.

Key words: ANZAC Day, COVID-19, depression, isolation, lockdown, loneliness, lonely, New Zealand, pandemic, protective factors, qualitative, Veterans, Veterans' Affairs New Zealand

RÉSUMÉ

Introduction : Le 25 avril 2020, *Veterans' Affairs in New Zealand* (NZ) a téléphoné à environ 3 000 des 8 000 vétérans connus pendant la pandémie du virus SARS-CoV-2 afin de s'assurer de leur sécurité dans le cadre du confinement imposé par le gouvernement. Cette initiative était motivée par les observations d'un sondage quantitatif transversal auprès des vétérans de NZ,[1] suivi du sondage qualitatif exposé dans le présent article. Tous deux ont été réalisés en 2019. Le premier rapport a démontré que 33 % des 89 répondants étaient esseulés et signalaient des obstacles à obtenir de l'aide et que plus de la moitié des vétérans se sentaient mal à l'aise d'y accéder. **Méthodologie :** Pour comprendre les facteurs à l'origine de la solitude, les chercheurs ont créé un sondage fondé sur les obstacles déjà établis et sur une analyse bibliographique. Au moyen d'un échantillon raisonné reposant sur le genre, l'âge et l'ethnie, ils ont extrait 20 répondants du premier sondage, soit dix qui souffraient de solitude et dix qui n'en souffraient pas. Ils ont fait suivre les entrevues d'une analyse thématique inductive et dégagé des thèmes et sous-thèmes. **Résultats :** Dix des 20 participants potentiels ont répondu, soit six qui souffraient de solitude et quatre qui n'en souffraient pas. L'isolement social et géographique, les difficultés de réintégration à la vie civile et les problèmes de santé faisaient partie des facteurs qui contribuaient à la solitude des vétérans. La connectivité sociale, notamment avec les camarades de service, était le principal facteur protecteur. Les obstacles incluaient le stoïcisme et la perception que les services étaient inefficaces et inaccessibles. Les vétérans qui

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n'avaient pas participé à des missions opérationnelles ont également considéré l'iniquité du système d'aide aux vétérans comme un obstacle. **Discussion :** Pendant la pandémie, la connectivité sociale a diminué et la solitude a augmenté. L'élaboration d'interventions tenant compte de ces facteurs et l'assurance d'offrir l'équité d'accès à l'aide devraient contribuer à contrer la solitude des vétérans.

Mots-clés : COVID-19, confinement, dépression, esseulé, facteurs protecteurs, isolement, Journée de l'ANZAC, Nouvelle-Zélande, pandémie, qualitatif, solitude, *Veterans' Affairs New Zealand*, vétérans

INTRODUCTION

ANZAC Day and COVID-19

The New Zealand and Australian Division, later to be known as the Australian and New Zealand Army Corps (ANZAC), landed on Turkey's Gallipoli Peninsula at dawn on April 25, 1915. The first ANZAC Day, a joint day of remembrance for both countries, was held a year later on April 25, 1916, and every ANZAC Day since then. In 2020, ANZAC Day fell in Week 4 of the SARS-CoV-2 response, with the country in isolation to prevent community spread of infection. It was the first time since 1916 that New Zealanders were unable to gather nationwide to mark what has become their national day. With appropriate social distancing, spontaneous events did take place and addressed a vital need for community connectedness for both Veterans and New Zealanders as a nation.

Veteran loneliness had not previously been investigated in New Zealand, but a cross-sectional quantitative survey carried out in 2019 found 33% of the 89 respondents were lonely, with high levels of distress, and over half of the lonely respondents expressed barriers to accessing support[1]. This suggested a more in-depth qualitative approach to explore how the participants conceptualized and experienced loneliness. Although carried out prior to the SARS-CoV-2 pandemic, the findings highlighted problems with loneliness and social isolation likely to be exacerbated during the response. COVID-19 alert Level 4 became known as the "lockdown," and, barring essential workers, New Zealanders had to stay at home unless exercising or grocery shopping. This enforced but necessary social isolation helped prevent the pandemic's spread but seemed likely to exacerbate loneliness.

A preliminary report on this study, previously shared with New Zealand Veterans' Affairs (NZVA), a unit of the New Zealand Defence Force, gave the organization the idea to contact 3,000 Veterans with active claims for whom NZVA had contact details. Veterans contacted by NZVA ranged in age from 19 to 109 years.

Social isolation and loneliness are recognized problems for society in general, being linked to increased mortality and morbidity,[2] forming an important narrative in the experience of Veterans. They are associated with the transition to civilian life, and particularly with re-integration into the wider community[3] Military–civilian transition is a complex process[4,5] that begins before service, occurs during service, and extends to life after service. While military members are selected for their health, adverse childhood experiences may be what motivates some to enlist in the first place.[6] During service, the mobile and transient nature of employment mean transitions are frequent, impacting loneliness and social isolation for some.[7] Posttraumatic stress injury (PTSI), along with traumatic brain injury, are the signature wounds of the conflicts in Afghanistan and Iraq,[8] negatively impacting physical and psychological health and contributing significantly to loneliness.[4] Loss of military identity, community, and culture[9] make identity adjustment difficult post-service, causing some Veterans to feel alienated in the civilian world.[10]

Social isolation and loneliness are important constructs, often used interchangeably, but fundamentally different,[11] with social isolation being a significant feature of the pandemic response. The loneliness of a Veteran may also be unique, conceptualized as experiential isolation, a sense that no one else understands what the Veteran experience is like, rather than the classical concepts of social or emotional isolation. *Intersubjectivity* is a sociological term described by Reich as "implying a promise of a connection ("inter") between seemingly autonomous selves ("subjects")."[12] Veterans may experience a failure to connect (a sense of failed intersubjectivity) in several ways, such as a loss of sense of self in the civilian world, an inability to relate to those who have not served, and a feeling they are the only person who feels a certain way.[13]

In older Veterans, risk factors for loneliness include advanced age, disability in activities of daily living, trauma, perceived stress, depression and symptoms of PTSI.[2] Protective factors are being married or cohabitating, higher income, greater subjective cognitive functioning,

social support, secure attachment, dispositional gratitude, and frequency of attending religious services. While these factors do not necessarily alter vulnerability for all individuals, a complex interplay of intrinsic and extrinsic factors seem to impact loneliness for some Veterans. As social isolation is a problem, appropriate social support would appear to be part of the solution.[14]

As we wish to develop interventions, the research questions are: What are the risk and protective factors for loneliness in New Zealand Veterans, and how can support be improved? This qualitative study was therefore carried out with the aims of determining how Veterans conceptualize loneliness, identifying the potential risks and protective factors, and ascertaining if there were barriers to seeking support.

METHODS

Veteran classification

There are thought to be approximately 31,000 Veterans in New Zealand, aged 19 to 109 years.[15] Legal Veterans are those who "took part in qualifying operational service at the direction of the New Zealand Government."[16(p.18)] This group has access to health and social support from NZVA. Veterans without qualifying operational service cannot access these services but are entitled to no-fault compensation for injuries and occupational illnesses under the Accident Compensation Act 2001 (The ACC Act).[17] Both groups have access to the free public health care system. In this article, the inclusive definition of *Veteran* was used regardless of operational status.

Participants

This study was a follow-up to a cross-sectional scoping survey on loneliness in which 62 of 89 participating Veterans consented to follow-up.[1] The original survey and the follow-up reported here were carried out by successive groups of final-year medical students, Trainee Interns (TIs), over a six-week period, as a timetabled health care evaluation project. The 62 Veterans from the original 89 who agreed to follow-up were aged 18 years and older, and members of the Royal New Zealand Returned and Services Association (RSA) and/or NZ military social media sites. To ensure the sample was reasonably representative of NZ Veterans, a purposeful sampling strategy was developed using the demographic variables previously collected, including gender, age, ethnicity, living arrangements, and self-reported feelings of loneliness.[1]

Based on the logistics of the six-week timeframe, a total of 20 potential participants were selected for interviews. In order to facilitate comparisons in the original survey, we used the single-item loneliness question from the New Zealand Social Report:[18] "In the past 4 weeks, how often did you feel lonely?" Participants were classified as lonely if they answered "most of the time" or "all of the time," and non-lonely if they answered "none of the time" or "some of the time." Each participant was contacted by telephone and asked whether they remained willing to be interviewed, as indicated during the original study. If agreement was provided, email addresses were obtained and a consent form sent to participants, with follow-up by email and phone if consent was not given within a week.

Email addresses were obtained for all but one of the 20 potential participants, who was sent a consent form by postal mail. Eleven completed forms were returned, and one consenting participant could not be contacted; hence a total of 10 out of 20 interviews were completed (6 lonely and 4 non-lonely). Participant demographics are shown in Table 1.

Table 1. Participant demographics

Characteristics	No.*	
	Lonely	Not lonely
Sex	4/2	4/0
Male	4	4
Female	2	0
Age range (years)	39–76	50–71
Employment		
Retired	3	2
Full time work	2	1
Part time work	1	1
Living arrangements		
With others	4	4
Alone	2	0
Relationship		
Married	3	4
Widowed	0	0
Single	2	0
Divorced	1	0
Service		
Army	5	2
Navy	1	2
Serving	1	1

* Unless otherwise noted.

Study design

Consenting participants were contacted by telephone for semi-structured interviews lasting about 20 minutes each. A set of group-specific, open-ended questions was developed based on the barriers identified in the previous quantitative study[1] and a rapid literature scan by the TI group.

The telephone calls were recorded and transcribed by two members of the TI research team. Data collection was to be truncated if data saturation was reached prior to all 20 participants being interviewed. Three members of the research team carried out an inductive thematic analysis[19] by open coding of the text data from the transcripts, grouping these into meaningful units of data and then into categories and themes. Two others not involved in the data collection, transcribing, or coding cross-validated the themes and sub-themes and developed a thematic map to show their interrelationships. The RSA national support advisors were also contacted to provide a general perspective on loneliness and Veteran support in New Zealand.

Ethics approval was obtained from the University of Otago Human Ethics Committee, reference no. F19/007 and the authors consulted with the Ngāi Tahu Research Consultation Committee to assess the relevance of the project to Māori.

RESULTS

After 10 interviews, three central themes emerged from the thematic analysis. The team agreed that the following themes encapsulated the main concepts emerging from the interviews: (1) the impact of isolation and health-related factors on the development of loneliness; (2) the importance of feeling connected and supported in mitigating feelings of loneliness; and (3) the overall barriers to being supported after military service (Figure 1).

Risk factors for loneliness

Two themes – isolation and health-related factors – emerged as risk factors for loneliness across both groups of participants.

Isolation

Isolation was expressed in both a social and geographical context. From a social perspective, participants talked about difficulty re-integrating into civilian life post-service, and a lack of geographic stability during service, as enhancing a sense of isolation. Difficulty

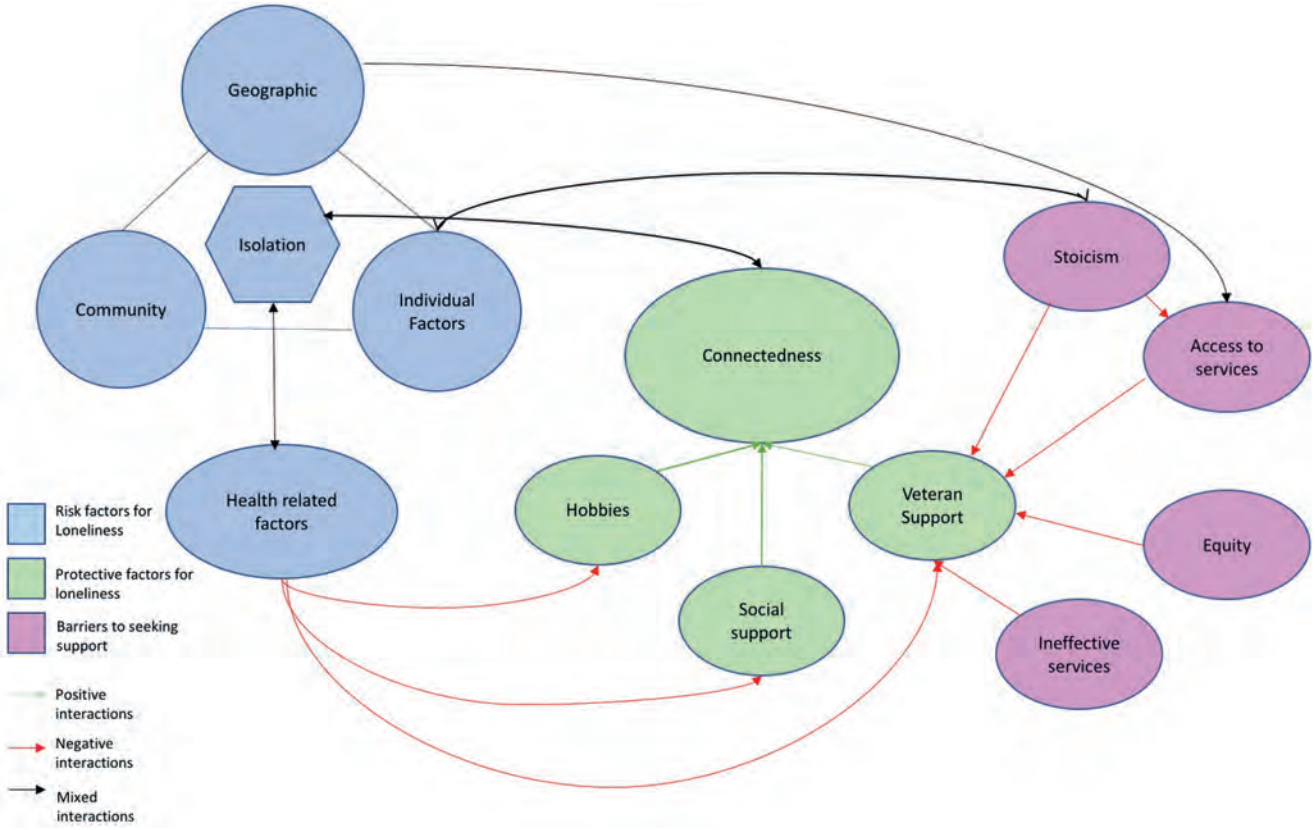

Figure 1. Thematic relationships emerging from the interviews

re-integrating into civilian life and into non-military communities represented social distancing, a feeling that others did not understand. Physical separation from old friends, colleagues, and the military hampered a sense of social connectedness.

Health-related factors

Health-related sub-themes included psychological problems, in particular anxiety, depression, and recurrent traumatic memories, described by interviewees in the lonely group. Several said loneliness was related to the inability of civilians within their family, or circle of friends to understand or share their past experiences.

> My last partner, she made my life hell because she wanted to know what happened, and I said, "you don't want to know," and my clinical psych said, "don't tell her because all you're going to do is traumatize her," and to the point where she pushed me, and I said "I was involved in this," and then she changed overnight and 6 weeks later I had to end things because it was all out of control. (Participant 5)

Several participants described feeling depressed and anxious at various stages after service, which made them withdraw from those around them, perpetuating their feelings of loneliness. Physical health problems related to military service, either directly or indirectly, also had a negative impact.

> Medical issues from service can be contributing to this ... people with a noise-induced hearing loss do tend to isolate themselves ... I've just had a knee replacement 6 months ago, I find that it's not going too well; my ability to get out and exercise is less. (Participant 5)

Protective factors for loneliness

Connectedness emerged as a major theme to protect against loneliness, expressed as social support, support from Veteran organizations, and engaging in hobbies. Many participants identified the prominent role of connectedness in "keeping busy" or "distracted," while others spoke about the importance of being able to converse with non-judgemental people.

Social support

Having a sense of connection to others or meaningful activities was the main mitigating factor of loneliness identified in participant interviews, both in the lonely and non-lonely groups. In terms of social support, the main theme was a sense of having someone to talk to. Many participants mentioned the role of family, often their spouses, in mitigating loneliness.

For others, friends played an important role.

> ... Changes are going to happen, and if people that feel lonely or isolated are gonna get support that they need it's got to come from their friends, and we've got to get better at talking about it amongst ourselves. (Participant 6)

The key point of connection for participants was shared understanding of what it was like to be in the military, having a confidante, and talking about feelings of loneliness. Some identified a unique relationship with service peers who could help destigmatize feelings of loneliness. This is an example of the social integration that takes place in the military, where Veterans have similar experiences or perspectives that are fundamentally different from those of civilians, making a shared understanding with civilian family and friends difficult, if not impossible, to achieve.

> ... Peer-to-peer mentoring, sometimes it's speaking to someone who served with you, it normalizes it a lot more ... If somebody speaks to you one-on-one, you may open up about the first thing, you know, I've suffered too, you don't feel so ... vulnerable, because (otherwise) you think I'm broken, and I'm the only one. (Participant 7)

Hobbies

Participation in community service, sports clubs, travel, hobbies, and employment were other ways in which Veterans expressed finding connectedness during their interviews.

> ... I'm just busy, I travel a lot, and I've got family, and I don't think there's enough opportunity to feel lonely. it probably is a key factor, I would say. (Participant 1)

Veteran support

A good relationship with Veteran support services was mentioned as a modifier of loneliness, with both the lonely and non-lonely groups having a good sense of available services. The support role of NZVA was noted by several participants:

> I've found Veterans Affairs very helpful. And they've certainly stood up to the plate when it came to supporting me, so I am very happy with that. (Participant 10)

Barriers to accessing support

Four main categories emerged during participant interviews as barriers to accessing support for Veterans' loneliness: (1) stoicism; (2) access to services; (3) equity; and (4) perceived efficacy of services.

Stoicism

Stoicism was a common topic for participants and, for some, a direct barrier to accessing support services. Despite needing help, participants indicated a reluctance by Veterans to seek support due to developing a culture of independence and resilience during their military training and service. Asking for help was perceived by some as a weakness, character flaw, or antithesis to military culture.

> The biggest issue is around the Veterans themselves and ... serving soldiers saying, "Oh, harden up, you don't want to let your mates down." (Participant 4)

Access to services

Difficulty accessing Veteran support services was reported to contribute to Veterans' loneliness, either due to poor communication between services and individuals in need or due to financial constraints, geographical barriers, and individual factors, such as motivation and/or willingness to engage with such services.

> The RSA ... they don't put notices up; they don't provide any information about any entitlements that you can get access to ... for us Navy guys, it's only been through word-of-mouth and the Navy Facebook pages. (Participant 3)

Participants emphasized the impact of geographical isolation from support services as a contributor to loneliness, particularly in rural settings where larger organizations may not have active offices. Funding for Veterans' services was also a common topic.

> You see a lot of money going in a lot of spaces, but you don't see much going specifically to servicewomen or servicemen. (Participant 3)

Differential treatment and equity

Differential treatment of Veterans at an inter-service, local, and international level was an important theme among participants, with discrepancies reported in the quality and breadth of support offered under the Veterans Support Act in comparison to the ACC Act:

> If you haven't deployed, you're a second-class citizen and don't get the full support of Veterans Affairs. (Participant 7)

Ineffective services

Participants felt support services currently offered in New Zealand were ineffective, with a proportion in both groups expressing concern. Some participants claimed services were limited by financial constraints and others described how this limitation impacted the range and quality of support services offered. Participants explained how getting help sometimes required several proactive attempts to engage with organizations.

> (A friend with cancer) said at the time, "I signed the blank cheque and declared my life to the New Zealand Government, and I expected to be looked after," and he wasn't ... there is no support when you leave ... and you've got to justify everything. (Participant 4)

> ... I hit the wall mid last year, and Veterans affairs couldn't find anyone for me to see. No one. They sent me to (employment assistance program) they said, a guy that knew nothing about military or PTSD, but he wants to talk to you. And I said, look, it's not going to work, but I need help, so I'll go along. After 20 minutes, the guy has gone pale, and I had no idea what to say or do. (Participant 5)

Some participants perceived problems within organizations and with the programs offered and were frustrated, criticizing both the quality and availability of services. This was countered by an unwillingness to engage, as well as by other participants with entirely different experiences, who commended organizations for the support they offered. There were complex relationships between the factors, both driving and mitigating, that interacted to promote either a sense of connectedness and shared understanding, or of isolation and loneliness. Stoicism, as a barrier, was the principle personal factor identified during the participant interviews.

The RSA perspective

In view of the negative comments about support, the authors also spoke with the RSA national support advisors to gain their perspectives on loneliness in Veterans. The advisors emphasized that most Veterans in New Zealand are not lonely due to the personality factors of resilience and a focus on the future. They did, however, note that younger NZ Veterans perceive the RSA as a social club for older people and do not believe it is relevant to them.

They also referred to the stereotypical Veteran "macho image" and a sense of being "bulletproof," which can be significant barriers to seeking help.

DISCUSSION

In this qualitative study of six lonely and four non-lonely Veterans in New Zealand, two themes emerged as significant risk factors for loneliness: isolation, both social and physical; and health-related factors. Participants indicated physical and social isolation were related, the former associated with social disconnectedness. In addition to physical distancing, social distancing emerged as problems re-integrating into civilian life and assimilating into non-military communities post-service. Health-related factors included both physical and mental illnesses, with experiential loneliness – a failure of civilian family and friends to share or understand – the Veteran military experience, a common issue.

Factors protective against loneliness and social isolation were support from family, friends, and peers; and the development of a shared understanding of life in the military and the changes that take place on transition. Developing hobbies and staying occupied were also important. Most participants knew of the Veteran support organizations and services available to them; however, a significantly direct barrier to seeking support was found to be a stoic personality, largely developed as part of the military culture. Geographical isolation, and the perceived ineffectiveness of support services offered, were also barriers. Injustice was a sub-theme among study participants, as some Veterans were ineligible for support from NZVA.

Stoicism, as a construct of socialized masculinity, develops during military service as part of the military identity and is now being recognized to have associations with re-integration stress and a poor transition experience.[20] Stoicism may be maladaptive when re-integrating into civilian life and seeking help because when health is involved, the classical concept of stoicism has much to do with resilience, whereas maladaptive stoicism focuses on "silence, non-admission and non-help seeking behaviours."[21] A lasting adherence to the military culture and developing a strong military identity is, therefore, a vulnerability in transition. Upon leaving the military culture, community, and identity is lost or much diminished, leading to a loss of purpose.[9] If Veterans still have a very strong identification with the military, an "inhibiting military mind,"[5] the reconnection to civilian life may fail.

The physical and psychological health problems faced by Veterans are also known to impact loneliness.[2] In a study of Veterans with depression, loneliness was related to higher levels of depression and suicidal ideation, reduced patient activation, not having the knowledge, skills, and confidence to manage one's health, and reduced health-seeking behaviour.[22] Some Veterans with psychological health problems associated loneliness with the inability of their family or friends to relate to their past experiences. This is a common narrative that is often conceptualized by researchers as experiential isolation, which is not just as a result of social isolation but also as a failure of others to share their thoughts and feelings. This is failed intersubjectivity, particular to Veterans, because they see their experiences as being unique. In any intervention, this must be addressed for reconnection to occur.[14]

As connectedness was found to be a major theme in this study, peer-to-peer support has potential as a possible loneliness intervention,[3,11] as participants described the benefits of having someone to talk to, either family or friends, but especially a service peer who was non-judgemental and could help them destigmatize their fears.

Participants expressed dissatisfaction with support services, and while there did seem to be problems with access, including financial and geographical barriers, in this small study, motivation to engage also seemed to be a significant barrier. Weir et al[23] reported that many UK Veterans have difficulty engaging in mental health treatment programs due to mental health stigma, poor self-recognition of need, feeling alien and disconnected from civilian health services, and only seeking help when a crisis point was reached. A peer support role in service provision improved the situation "in the majority of instances."

Equity in Veteran support services in New Zealand emerged as a fundamental issue in this small study and has been recognized in a review of the Veteran's Act. A review of the Act recommended a public debate on extending benefits to all Veterans and improving the provisions for their families.[24] It remains to be seen whether or not this gains traction in the fiscal aftermath of COVID-19.

Strengths and limitations

The primary strength of this study is that it is the first qualitative study to address Veteran loneliness in New Zealand, with both lonely and non-lonely participants

taking part. Weaknesses include the constraint of the six-week period in which to complete the entire project, the small number of respondents and the imbalance between lonely and non-lonely, the latter making it difficult to draw contrasts between these groups. Moreover, the single-item loneliness question, while often used in large surveys,[18] does not capture the underlying constructs of loneliness and social isolation. The results, therefore, cannot be generalized to Veterans as a whole. Response bias is also possible – it cannot be determined in which direction – whether distressed Veterans were more likely or less likely to respond. At-risk Veteran groups, including Māori, women, Pacific Island, and younger Veterans, are also underrepresented.

Conclusion

The results did raise awareness of Veteran loneliness, led to personal contact during the COVID-19 lockdown, and emphasized that the problem needs to be addressed. There were limitations, so generalizing to the larger group of Veterans by including women, young, and Māori Veterans is essential. The role of stoicism must be explored, as it may be a gender-based concept. We do know the findings to be congruent with existing knowledge in that civilian–military transition is a vulnerable period for some Veterans, especially those who have a strong attachment to military culture. This requires careful assessment and management,[4] with risk factors being recognized at the point of transition,[5] and appropriate support provided.

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COMPETING INTERESTS

None declared.

CONTRIBUTORS

All authors conceived, designed, researched, and drafted the manuscript and approved the final version submitted for publication.

Leanda Lepaio, Natasha Fasi, and Toby Calvert conducted the participant interviews. Ryder Fuimaono, Ben Liu, and Timothy Galt transcribed the interviews. Nicolas Theis, Fiona Doolan-Noble, and Timothy Galt performed the thematic analysis. Sam Jackson, Leanda Lepaio, and Darren Ritchie performed the cross validation.

Note: This was a student project completed in a six-week time frame, during which the students worked as a team. They are therefore alphabetically listed. The supervisors were responsible for ensuring the final product was of good publishable quality.

ETHICS APPROVAL

The study protocol was approved by an ethics committee and the ethics certificate information is available from the authors upon request.

INFORMED CONSENT

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PEER REVIEW

This article has been peer reviewed.

COVID in crisis: The impact of COVID-19 in complex humanitarian emergencies

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ABSTRACT

Introduction: Two billion people are currently affected by complex humanitarian emergencies (CHEs) resulting from natural disasters and armed conflict. Many have been displaced into crowded camps with poor access to water, sanitation, and health care. Humanitarian response is challenging under these circumstances, raising concern about the impact of COVID-19 on crisis-affected populations. **Methods:** This article examines CHEs in the Democratic Republic of Congo, Bangladesh, and Yemen, where protracted crises have displaced millions of people. Through use of a conceptual model, we examine barriers and facilitators to an effective COVID-19 response in these complex settings, and explore the future impact of the pandemic on crisis-affected populations. **Results:** Younger populations, who tend to have less severe COVID-19 disease, and existing response mechanisms, including educational health messaging, may facilitate the COVID-19 response in some CHEs. However, pre-existing chronic illnesses and malnutrition, coupled with poor access to health care and limited water/sanitation infrastructure, may increase COVID-19 infection rates and mortality. Exacerbated health care shortages, food insecurity, interrupted immunizations, increased insecurity, and worsened poverty may have a particularly severe impact. **Discussion:** A wide-reaching global response, incorporating the voices of marginalized populations, is needed to effectively and equitably respond to this global pandemic. Given the potential future deployment of Canadian troops to CHEs, an understanding of the COVID-19 response and pandemic implications in CHEs is critical for Canadian Armed Forces members.

Key words: armed conflict, Bangladesh, Canadian Armed Forces, CHEs, complex humanitarian emergencies, coronavirus, COVID-19, Democratic Republic of Congo, disasters, pandemic, Yemen

RÉSUMÉ

Introduction : Deux milliards de personnes sont touchées par des urgences humanitaires complexes (UHC) attribuables à des catastrophes naturelles et des conflits armés. Bon nombre sont déplacées dans des camps surpeuplés où l'accès à l'eau, à l'hygiène et aux soins de santé est largement insuffisant. La réponse humanitaire pose problème dans ces circonstances, ce qui soulève des questions sur les répercussions de la COVID-19 dans les populations touchées par des crises. **Méthodologie :** Le présent article porte sur les UHC en République démocratique du Congo, au Bangladesh et au Yémen, où des crises prolongées ont suscité le déplacement de millions de personnes. Grâce à un modèle conceptuel, les chercheurs ont examiné les obstacles et les incitations à une réponse efficace à la COVID-19 dans ces contextes complexes et ont exploré les futures répercussions de la pandémie sur ces populations. **Résultats et discussion :** Les populations plus jeunes, qui ont tendance à être atteintes d'une COVID-19 moins grave, et les mécanismes de réponse existants, y compris les messages pédagogiques en matière de santé, pourraient faciliter la réponse à la COVID-19 lors de certaines UHC. Cependant, les maladies chroniques préexistantes et la malnutrition, couplées à l'accès largement insuffisant aux soins de santé et au peu d'infrastructure d'approvisionnement en eau et d'assainissement peuvent accroître les taux d'infection à la COVID-19 et la mortalité. L'exacerbation de la pénurie de soins, l'insécurité alimentaire et l'aggravation de la pauvreté peuvent avoir des conséquences particulièrement graves. Une réponse mondiale d'envergure, intégrant les points de vue des populations marginalisées, s'impose pour répondre à cette pandémie mondiale de manière efficace et équitable. Étant donné le déploiement potentiel des troupes canadiennes vers des UHC, il est

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essentiel que les membres des Forces armées canadiennes comprennent les réponses à la COVID-19 et les conséquences de la pandémie sur les UHC.

Mots-clés : Bangladesh, catastrophes, conflits armés, coronavirus, COVID-19, Forces armées canadiennes, pandémie, République démocratique du Congo, UHC, urgences humanitaires complexes, Yémen

INTRODUCTION

Two billion people are currently living in fragile and conflict-affected states.[1] By early 2019, armed conflict and insecurity had driven a record 70.8 million people from their homes and one in every 45 people worldwide were expected to need humanitarian assistance and protection in 2020.[2] Many displaced individuals are sheltering in overcrowded camps with poor access to water, sanitation and hygiene (WASH), and health care facilities.[3]

A complex humanitarian emergency (CHE) combines natural disasters and man-made elements, such as armed conflict, with pre-existing vulnerabilities to create a crisis that requires a large-scale, multi-agency humanitarian response.[4] CHEs are typically characterized by extensive violence, lack of governance, population displacement, and extensive economic and societal damage as well as significant security risks.[4,5] Fragile states are characterized as having a combination of exposure to risk and insufficient coping capacity of the state, system, and/or communities to manage, absorb, or mitigate those risks.[6] Fragility increases vulnerability to violence, the breakdown of institutions, displacement, humanitarian crises, and other emergencies. CHEs often involve the displacement of large numbers of people, including those defined as refugees (people who have fled war, violence, conflict, or persecution and crossed an international border to find safety in another country)[7] and internally displaced people (IDPs), those who flee for safety but stay within their own country and remain under the protection of their own government.[8]

Within CHEs, communicable diseases, such as acute respiratory infections and diarrheal illnesses, are often the major killers, and their control is dependent on clean water, adequate sanitation, appropriate shelter, immunization, and availability of trained health workers.[9] However, implementation of these control measures is often challenging in CHEs. For instance, it is recommended that camp size not exceed 10,000–12,000 people, or that camps be subdivided into independent units of no more than 1,000 people, in order to manage and control communicable diseases.[9] As outlined later in this article, many CHE camps are overcrowded, making it exceedingly difficult to implement control measures that would more effectively limit spread of communicable illnesses.

On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic.[9] As of August 7, over 19.1 million infections and more than 715,000 deaths had been reported across 188 countries.[10] In this article, the COVID-19 pandemic in CHEs is considered using three case studies: Democratic Republic of Congo (DRC), Bangladesh, and Yemen. Through these case studies, the authors propose a conceptual model they believe is pragmatically helpful in understanding how barriers and facilitators to the COVID-19 response relate to each other, while also highlighting the potential future impact of COVID-19 on vulnerable populations.

How is COVID-19 in CHEs relevant to Canadians? As emphasized by WHO's Dr. Ahmed Al Mandhari, "This is a global pandemic, and the only way to fight it is to do so together. No one is safe until everyone is safe."[11] As long as there are uncontrolled COVID-19 outbreaks in this era of globalization, Canadians will continue to be at risk. Additionally, evidence suggests that, within Canada, COVID-19 is disproportionately affecting lower income neighbourhoods and ethnic minorities.[12–14] Some of these marginalized Canadians share similar COVID-19 response barriers (e.g., inadequate housing, lack of access to health care) and anticipated outcomes (e.g., economic burden, food insecurity) with individuals and families living in CHEs. Therefore, the conceptual model is also pertinent to vulnerable populations in Canada, and the authors believe the COVID-19 response must take an equity lens that incorporates the voices of marginalized populations both domestically and globally.

How is COVID-19 in CHEs relevant to the Canadian military? As of June 2020, the Canadian Armed Forces (CAF) had approximately 2,000 members deployed abroad, including in the DRC.[15] Previously, the Canadian military has deployed to Jerusalem/Palestine, Niger, Uganda, South Sudan, Jordan, Lebanon, Israel, and Syria.[16] As part of United Nations (UN) missions, Canadian military operations may be active in, or intersect with, CHEs. Guidelines for military involvement in humanitarian operations,[17,18] as well as for civil–military

coordination in the context of COVID-19, have been published.[19] While some operations have been paused and others adapted in light of the pandemic, the reality of our new COVID-19 "normal" may be that Canadian troops are going to deploy to CHEs, or similar contexts, in order to contribute to the global fight against COVID-19, or to address security threats that arise from, or are exacerbated by, the pandemic. Should these deployments occur, understanding the response to, and implications of, the COVID-19 pandemic in these contexts will be key to protecting both the military personnel and the crisis-affected population.

COMPLEX HUMANITARIAN EMERGENCY CASE STUDIES

Democratic Republic of Congo

Decades of armed conflict and political instability have resulted in a protracted humanitarian crisis in the DRC. With pervasive poverty, a fractured health care system, and limited public health infrastructure, the population is highly vulnerable to communicable disease epidemics. DRC is also home to the largest population of IDPs in Africa, with 5.01 million internally displaced, in addition to hosting 517,000 refugees.[2] With conflicts expected to continue, an estimated 15.9 million people are projected to need humanitarian assistance in DRC in 2020.[2]

One of the most insecure areas of DRC, Ituri and North Kivu, has been experiencing an Ebola virus outbreak since August 2018. The number of Ebola cases has now surpassed 3,300 with over 2,200 deaths, making it the second largest Ebola epidemic ever.[20] Security incidents have hindered the Ebola response, reducing operational capacity, rendering some health zones inaccessible, and likely increasing transmission.[21,22] Up to 80% of documented attacks targeted Ebola treatment structures or response personnel. The Ebola response has also been hindered by lack of institutional trust and misinformation,[23] and conflict events are thought to have reversed an otherwise declining phase of the Ebola epidemic trajectory.[24]

Simultaneously, DRC is also experiencing its worst measles outbreak in recent history, with more than 209,000 cases between January and October 2019, and 4,189 deaths.[2] Because of disrupted water supplies and population movement, cholera has also become endemic to eastern DRC and the country now accounts for 5%–14% of annual cholera cases worldwide.[25]

Bangladesh – Rohingya refugee crisis

An estimated 855,000 Rohingya refugees reside in 34 camps within the Cox's Bazar District of Bangladesh. The Rohingya people have faced repeated violence in Myanmar, with large numbers of refugees intermittently flowing into Bangladesh, including the well-publicized migration beginning in August 2017.[26] Considered a stateless people, the Rohingya have been subjected to discrimination, targeted violence, crimes against humanity and other human rights violations.[27]

The Rohingya are living in crowded conditions with 4–8 people per shelter, and although currently stable, the situation remains fragile with respect to providing basic needs.[28,29] Eighty-eight percent of refugees are vulnerable to food insecurity (disruption of food intake or eating patterns because of lack of money and other resources),[30] with limited opportunities to produce food, restricted movement, and limited access to food and income. Only 29% of refugees have access to piped chlorinated water and only 32% of households reported hand washing following handling children's feces.[29] Both the refugees and the local population are facing high rates of unemployment as well as environmental concerns including pollution, deforestation, water shortages, cyclones, and annual monsoons.[29]

With 129 health posts serving the Rohingya refugee camps, at least 13 more primary health care centres would be needed to meet minimum standards.[31] Prior to COVID-19, 20%–25% of reported diseases in Cox's Bazar were acute respiratory illnesses, complicating identification of COVID-19 from other respiratory infections.[32] Furthermore, over two-thirds of deaths occur at home, making it difficult to identify and track causes of death.[33]

Yemen

Conflict in Yemen escalated significantly in March 2015. The ongoing war and resulting severe economic decline created the world's largest humanitarian crisis,[34] with the UN estimating that 100,000 people have died in Yemen in the last five years.[35] Two-thirds of the population, including 12 million children, are in need of humanitarian assistance or protection,[34,36] and 3 million people remain IDPs.[34] Parties to the conflict have impeded delivery of humanitarian aid, food, and medical supplies; they have targeted attacks on hospitals and civilians and recruited child soldiers, among other violations of international law.[37]

The protracted crisis in Yemen has caused widespread poverty, food insecurity, loss of livelihoods (means to

secure the necessities of life), and reduced access to education. Two million children across Yemen are missing education as schools close due to damage from armed conflict, hosting of IDPs, or occupation by armed groups.[34] Increased prices and lack of basic infrastructure has limited the ability to access safe water and hygiene items, exacerbating the risk of communicable diseases.[38] The health care system has been critically affected, with 49% of health centres not functioning due to shortages of staff, supplies and funding, or limited access.[34,39]

Adding to the complexity, three years ago, Yemen faced the worst cholera outbreak in modern times,[35] and in April 2020, once-in-a generation flooding caused injuries and infrastructure damage, exacerbated malnutrition, and increased the spread of disease, including cholera, malaria, dengue, and diphtheria.[35,40] Given the state of poor health care, underlying malnutrition and disease, modelling published by the UN suggests that over 55% of the Yemeni population will be infected with COVID-19, 300,000 will require hospitalization, and over 42,000 will die.[35] Data submitted to the United Nations at the end of June 2020 noted a rapid increase in the number of COVID-19 cases, with an alarming 25% of confirmed COVID-19 cases having died.[41]

COVID-19 RESPONSE IN COMPLEX HUMANITARIAN EMERGENCIES

Facilitators for COVID-19 response

The above case studies will now be used to illustrate the barriers and facilitators to COVID-19 response in CHEs and the impact the pandemic may have on CHE-affected populations. A number of facilitators to COVID-19 response in CHEs are noteworthy (see Figure 1). For instance, since older aged individuals tend to have higher COVID-19 related morbidity and mortality,[42,43] one factor that may be protective for Yemeni, Congolese, and Rohingya populations is their age distributions. In general, their populations are quite young – in DRC, 41% of the population is under the age of 15 years and the median age for the whole population is only 18.8 years.[44] Similarly, over half of the Rohingya refugee population is less than 18 years of age, and the median age for those living in Yemen is 20.2 years.[45] However, it is important to note that transmission rates are reportedly higher for household contacts of older school-aged children, aged 10–19 years (18.6% vs. 11.8%),[46] and thus, children may play an important role in COVID-19 transmission even if they experience less severe disease overall.

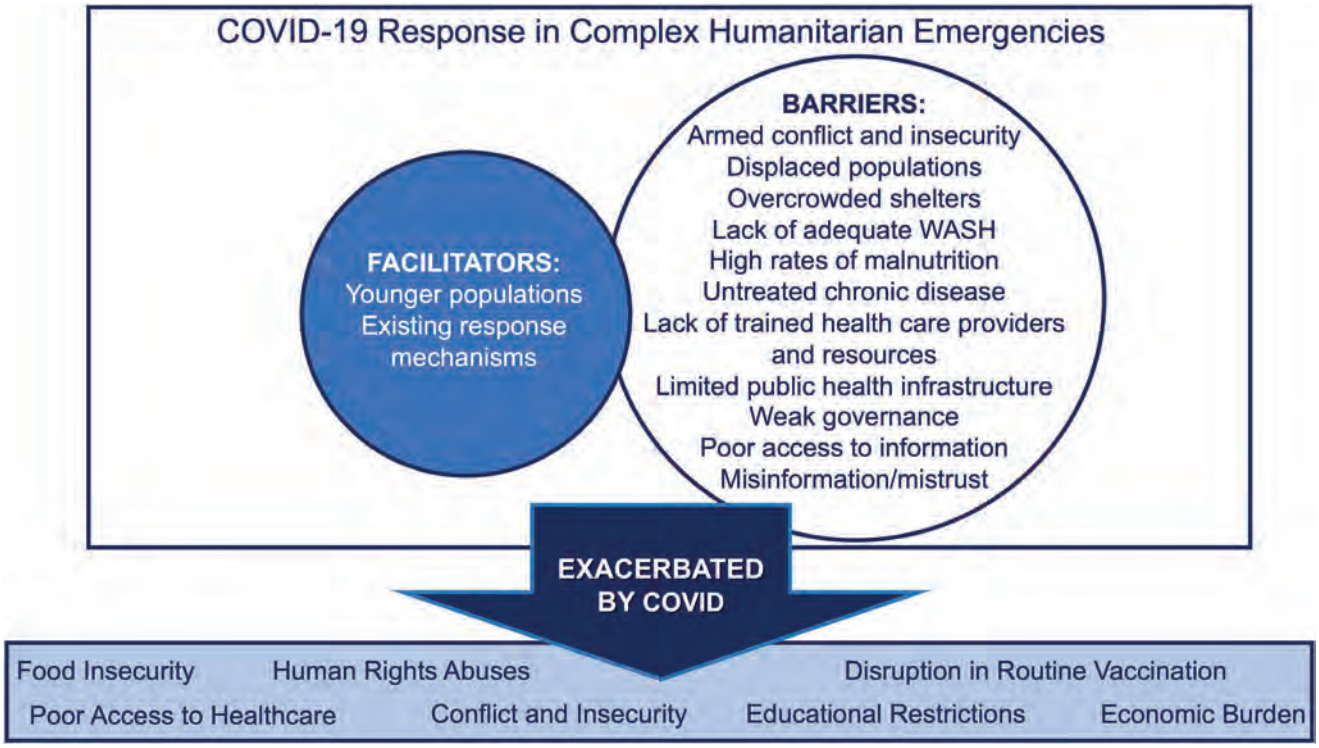

Figure 1. Conceptual model for barriers and facilitators to COVID-19 response in CHEs with anticipated future impact of COVID-19 on the lives of crisis-affected populations

CHE =complex humanitarian emergency; WASH = water, sanitation, and hygiene.

Additionally, because Yemen, Cox's Bazar, and the DRC have been managing other epidemics (cholera in Yemen;[47] Ebola,[20] cholera[25] and measles[2] in DRC; diphtheria in Cox's Bazar),[33,48] response teams and screening measures were already in place when the COVID-19 pandemic started. In CHEs, infrastructure set up for previous outbreaks can be rapidly switched to focus on COVID-19. For instance, 33 cholera-response teams in Yemen were rapidly transitioned to detect and respond to COVID-19,[48] task shifting for Rohingya community health workers allowed COVID-19 information to be disseminated more quickly,[28] and in DRC, the hand washing and temperature screening stations already in place for Ebola served equally well for the COVID-19 pandemic. In comparison, in many other contexts, including Canada, it took longer for proper screening measures to be implemented.[49]

Barriers to COVID-19 response

Social determinants of health describe the interrelationship between the personal, social, economic, and environmental factors that influence an individual's health status and the health of a population. Populations living in CHEs are likely to experience a complex range of factors that negatively impact their health given the wide-ranging effects of crisis on many, if not all of the social determinants of health. For instance, in CHEs, there are a number of barriers to a timely and effective COVID-19 response (see Figure 1). Cox's Bazar, DRC, and Yemen have all been affected by the mass population displacement characteristic of most humanitarian crises.[50] This usually results in overcrowded living conditions such as those previously described for Rohingya refugees,[26] and in DRC, ongoing movement is limiting access to public health messaging. Overcrowding and continued displacement make physical distancing techniques, promoted to limit the spread of COVID-19, nearly impossible in many crisis settings.

Compounding overcrowded living conditions, many people affected by CHEs also face limited access to adequate WASH, compromising their ability to protect themselves and their families from COVID-19. For instance, in Cox's Bazar, only 29% of refugees have access to piped chlorinated water,[29] in Yemen, lack of basic infrastructure has limited access to safe water and hygiene,[38] and in DRC, only 42% of the population has access to clean water with only 20% reporting access to basic sanitation.[51] The elevated COVID-19 infection rates reported from cruise ships earlier in the epidemic were attributed to sub-standard hygiene and crowded conditions[52] – conditions that are even more extreme and problematic in refugee and IDP settings.

While the younger Rohingya, Congolese, and Yemeni population distributions may offer some protection against severe COVID-19 infections and COVID-19 related deaths, this benefit may be counterbalanced by high rates of malnutrition and chronic diseases. Yemen and DRC had two of the top three worst food crises in 2019.[53] In Yemen, conflict has driven food prices nearly 150% higher, more than 20 million people are food insecure, and 3.2 million people require treatment for acute malnutrition.[54] One hundred percent of Rohingya refugees are reliant on food assistance to sustain daily nutritional requirements.[29] The link between undernutrition and immune health has been well established: individuals who are undernourished can have compromised immune systems that may increase the risk and/or severity of infections.[55] As a result, many crisis-affected populations may be at risk for higher COVID-19 infection rates as well as higher morbidity and mortality due to elevated levels of malnutrition. In conjunction with malnutrition, two other chronic diseases will likely exacerbate the impact of the COVID-19 pandemic in CHEs – human immunodeficiency viruses (HIV) and tuberculosis (TB). Both Myanmar and the DRC are among the top countries worldwide affected by the combination of HIV, multidrug-resistant TB, and HIV/TB co-infection,[56] and DRC ranks eleventh in the world in terms of TB burden of disease.[57] Untreated or undertreated HIV and TB in CHEs such as Yemen, Cox's Bazar, and the DRC will likely not only increase COVID-19 infection rates, but also virus-related mortality.

Despite a heightened need during the coronavirus pandemic, lack of health care providers, poorly functioning health care systems, and limited public health infrastructure will further compromise the COVID-19 response in CHEs. For example, in Yemen, where two-thirds of the population cannot access health care,[39] and there are only 10 health workers per 10,000 people,[23] resources and capacity to detect and treat COVID-19 are limited. Similarly, in DRC, there is only one health care worker and eight hospital beds per 10,000 people,[58] far below the recommended standard, and limited centralized COVID-19 testing results in significant delays. In previous more localized epidemics, the international response has been much more robust, including in the 2010–2011 Haiti cholera outbreak where more than 1,000 aid organizations responded[59] and in the

2014–2015 Ebola outbreak in West Africa, to which $3.6 billion was donated by top donor countries.[60] However, given the global nature of the current pandemic, the limited quantities of supplies (such as tests and personal protective equipment [PPE]) and travel restrictions, the international community will be much more restricted in its ability to support COVID-19 responses in CHEs.

Strong leadership, clear and consistent communication, as well as honesty and trust in the authorities are instrumental to an efficient and effective epidemic response. However, Yemen, DRC, and the Rohingya crisis are all characterized by poor governance, as is the case with many CHEs.[50] In these settings, mistrust and lack of access to information will likely hamper efforts to control COVID-19. In eastern DRC, mistrust and misperceptions around Ebola disrupted the response, including targeted attacks on treatment centres and health care personnel.[21–24] Mistrust of the quality of health services in the Rohingya refugee camps has been documented prior to COVID-19. Recent consultations with Rohingyas have identified concerns about not being treated due to distancing rules, a lack of treatment for conditions other than COVID-19, and rumours that those who contract the virus are being killed.[61] Furthermore, in conflict-affected areas, the pandemic may be used to weaponize public health protection measures, and armed combatants may seek to gain popular support and/or control the pandemic response by directing protection and mitigation measures to their own members, areas under their control and/or to populations that support them.[39,62] While responding to a pandemic of this magnitude is always difficult, dynamic complexities surrounding governance, lack of transparency, and armed rebel factions, will undoubtedly introduce additional challenges that will likely cause further suffering and loss of life.

ANTICIPATED FUTURE IMPACT OF COVID-19 IN COMPLEX HUMANITARIAN EMERGENCIES

In CHEs, the impact of the COVID-19 pandemic may be particularly severe, resulting in acute exacerbations of chronic food insecurity, inadequate access to health care, and ongoing human rights abuses (see Figure 1). It is also anticipated that the pandemic will disrupt routine childhood vaccinations, restrict educational opportunities, and lead to further economic deprivation among populations who already face severe poverty. These disruptions make it likely that COVID-19 could reverse some of the humanitarian and development gains made in recent years.[63–65]

COVID-19 related restrictions are already impacting global food supplies as well as the availability and affordability of safe and nutritious foods.[66] The UN World Food Programme predicts that by the end of 2020, COVID-19 could double the number of people facing acute food insecurity, with the majority of those living in conflict-affected countries.[67] Transportation and economic restrictions, export bans and border closures, job loss-related diminished purchasing power, and threatened agricultural production will all contribute to increased food insecurity.[68] Malnutrition, worsened by food insecurity, will further increase the risk of contracting not only COVID-19, but also other infections such as measles, pneumonia, malaria and diarrheal illness, particularly among younger children.[69]

Health care response to the COVID-19 pandemic will need to be coordinated with existing programs and system-strengthening initiatives in order to meet both pre-existing- and pandemic-related needs. It is critical that systems be inclusive of the most vulnerable populations, including IDPs, refugees, and other marginalized groups. Evidence from past epidemics demonstrates that outbreak containment diverts resources from routine health services, including maternal care, treatment of other diseases, and immunization programmes.[70] Routine immunization services have already been disrupted or halted in 53% of countries, affecting approximately 80 million children under the age of 1 year.[71] In countries supported by the Global Alliance for Vaccines and Immunizations, over 24 million people are at risk of missing critical vaccinations such as measles, cholera, polio, typhoid, rotavirus, and meningitis .[71] This is particularly worrisome since the overcrowded living conditions and lack of adequate WASH can exacerbate rapid spread of these highly communicable illnesses. Furthermore, concerns have been raised over equitable access to COVID-19 vaccines when they do become available. Access to COVID-19 vaccination in CHE settings will require affordable access and distribution to those most in need, rather than those most able to pay. The global competition observed for COVID-19 tests and PPE is likely to be even more fierce for vaccination. With declining funding and limited ability to advocate for themselves in the global market, people affected by CHEs are at risk of being neglected when COVID-19 vaccines are eventually distributed.

Sustaining and improving health care and public health systems will also require increased funding at a time when many donor nations are facing their own economic challenges. In northern Yemen, major donors began to reduce or suspend aid as the pandemic began, just as additional support was most needed.[39] With so few health care providers in DRC, Yemen and Cox's Bazar at baseline, should a proportion of the workforce be unable to work due to COVID-19 infection, the strain on already limited health care systems could be overwhelming.

On March 23, 2020, the UN Secretary-General called for a global ceasefire to allow humanitarian assistance in light of the COVID-19 pandemic.[72] Despite this potential opportunity to move peace agendas forward and in the midst of urgent calls for the UN Security Council to address COVID-19 as a threat to global peace and security,[72] conflict and insecurity continues in many areas. In Yemen, all parties to the conflict have continued fighting, with resultant civilian casualties and loss of infrastructure.[72] Blame for spreading COVID-19 is also escalating tensions,[39] and the pandemic is being used as a recruitment opportunity in Yemen, where Houthi activists are using the media to tell potential recruits that, "it is better to die a martyr in heroic battles than dying at home from the coronavirus."[62] There is further concern that human rights abuses are being committed under the guise of pandemic response. For instance, in Yemen, some migrants are facing discrimination as disease carriers, resulting in physical and verbal harassment, denial of health care, and forced quarantine without food, water, or other essential services.[11] There is additional worry that rates of sexual and gender-based violence are increasing as a result of COVID-19, highlighting the unique ways in which women and girls are affected by the pandemic, and how these can increase vulnerability to violence.[3,73] While the pandemic could serve as a turning point for cooperation and advancement of peace agendas, early days suggest that COVID-19 will be more likely to destabilize, thereby compromising supply chains, health care provision, social structure, and economic markets – all of which will ultimately increase civilian suffering.

CHEs were already dealing with a learning crisis prior to COVID-19, with many children unable to access formal education. Now, due to the pandemic, schools have been closed in more than 160 countries, affecting 1.5 billion children and youth.[74] With disrupted education for 80% of students globally,[39] loss of learning is especially concerning in light of further human capital loss and reduced economic opportunities in the long term. As the Ebola outbreaks demonstrated, the impact of lost education often has the most devastating consequences in countries where educational access is already challenging, and where school dropout rates are high.[74] From a workforce perspective, although younger populations are believed to experience less morbidity from COVID-19, patients experiencing severe COVID-19-related illness and death in Yemen appear to be younger than those seen earlier in the pandemic in Europe.[75] Similarly, early reports from Brazil, Mexico, and India showed increased mortality among younger populations.[76] Higher infection rates and more severe illness among younger patients has the potential to affect the future workforce, potentially exacerbating the economic burden of COVID-19. Although COVID-19 is expected to decrease the global gross domestic product (GDP) by 1.9% in 2020, these effects will be felt unevenly, with those in CHEs likely to experience some of the greatest effects.[39] Many people in CHEs survive on small daily earnings, and will be unable to adhere to COVID-19 imposed restrictions without a total loss of income. Already facing considerable poverty, even a small reduction in income for those living in CHEs may have significant impacts – reducing access to food, health care, WASH, and other essential supplies.

The pandemic also has the potential to create positive impacts for CHE populations. Digital innovations may find new ways to support CHE populations, such as the first-ever virtual reproductive health training (MISP) conducted in Bangladesh.[77] Social welfare programs may be increased, as was the case in more than 190 countries. The humanitarian sector has been working to move away from programs run by an ever-changing rotation of expatriates, and COVID-19 travel restrictions could encourage more roles to be taken up by local citizens and displaced populations themselves.[78]

COVID-19 will additionally impact humanitarian responders. For example, an April 2020 survey found that almost all humanitarian operations had been impacted by the pandemic, yet only a small number were stopped completely.[79] Furthermore, there have been reports of backlash against both international and national staff as vectors for the virus.[79] Anecdotally, many responders also face difficulties related to travel restrictions and quarantine rules when entering a new country or returning home, as well as a responsibility to respond to the pandemic in their own country, all of which make it more difficult to respond in international settings.

It is important to note that, with the WHO having just declared COVID-19 a global pandemic in March 2020 (at this writing, less than five months ago), it is still relatively early in what is expected to be a prolonged pandemic. The data presented here, and the authors' conceptual model, is based on available evidence at the time of writing. With second and subsequent COVID-19 waves anticipated, it remains to be seen how the pandemic and its global response will evolve.

CONCLUSION

Overcrowded living conditions with inadequate WASH, ongoing conflict and political instability, poor health care infrastructure, and poverty make those affected by CHEs more vulnerable to the COVID-19 pandemic. Not only are these populations at risk of COVID-19 infection, but they will also likely be impacted by a myriad of secondary effects that could be detrimental to their health and well-being in the months to years ahead. Given current globalization, the authors believe that a wide-reaching, equity-based response that includes the perspectives of vulnerable populations, such as those affected by CHEs, is the only plausible way to address the COVID-19 pandemic. Otherwise, Canadians will be at risk as long as the pandemic continues in international contexts. Finally, Canadian military members may be deployed to CHEs in the future to assist in the fight against COVID-19, or to mitigate insecurities arising from, or exacerbated by, the pandemic. As such, an understanding of the COVID-19 response and implications of the pandemic in CHEs is essential to ensuring success of those operations.

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Coping as the spouse of a military Veteran with PTSD during the COVID-19 pandemic

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INTRODUCTION

When a loved one has an Operational Stress Injury (OSI), the road to wellness can be hard to navigate, especially during times of crisis. Laryssa Lamrock and Polliann Maher, Family Peer Support Coordinators with the Operational Stress Injury Social Support (OSISS) program in Ontario, are spouses of Canadian Armed Forces Veterans with posttraumatic stress disorder (PTSD). They have helped their loved ones through struggles with hypervigilance, paranoia, heightened anxiety and isolation — symptoms that have increased for some Veterans during the 2020 COVID-19 pandemic.[1] Drawing on firsthand experience, and practical knowledge from assisting families living with a Veteran with an OSI, Lamrock and Maher offer the following insight to spouses of military Veterans with PTSD during the COVID-19 pandemic.

1 COMMUNICATE

It can be a roller coaster of emotions for spouses supporting Veterans with PTSD. It is impor-tant to keep open and ongoing communication about thoughts and feelings, as many Veterans living with PTSD may be continually working at assessing actual vs. perceived risk during the pandemic. This allows for the ability to support and assist each other in keeping perspective.

"I was rather surprised that my husband was not obsessed with the news of COVID-19 or being hypervigilant about the possibility of getting it. He has been really realistic about the whole thing."

— Maher

"My husband works daily at managing the impulses to respond in the way he was trained to. He curbs the instinct to "gather supplies and bunker down."

— Lamrock

2 SEEK OUT SUPPORT

Continuing to access mental health practitioners and other support systems during the pandemic should be a priority for both spouses and Veterans, as there is potential that PTSD symptoms may heighten with the added stressors of the pandemic. Connecting with peers and attending virtual mental health counselling appointments is important for maintaining recovery and adjusting coping strategies.

"I am tapping into my peer support on a daily basis, getting in some much-needed alone time, and letting go of what I can't control."

— Maher

3 DEEPEN YOUR INSIGHT

COVID-19 is a real threat. Most people are experiencing some form of hypervigilance (related to hygiene), hyperarousal (constantly on guard in public places) or anxiety (fear of illness, isolation) due to the pandemic.[2] These are feelings familiar to those with PTSD. Experiencing them in relation to the pandemic may provide some insight into what Veterans with PTSD feel on a regular, or semi-regular, basis. When the family has a clearer understanding of the mindset and behaviors of the Veteran (especially if there are new or changed behaviours since the onset of COVID-19), they are in a better position to support their loved one.

"I have become hypersensitive to the actions of those around me, knowing the proper procedures necessary to keep us safe during the pandemic. I don't have PTSD, but this provides me a small glimpse into what the experience might be for a Veteran who does."

— Lamrock

4 MANAGE PERCEPTION AND EXPECTATION

Routines and expectations have likely changed with the implementation of COVID-19 restrictions. While everyone has their own perceptions, individuals often forget to think about how others view the same world. Many Veterans may view the pandemic differently based on traumatic experiences they may have had while they served. Discussing and understanding each person's perceptions and expectations plays a huge role in how a couple works together to develop strategies in overcoming PTSD and COVID-19 related challenges.[3]

"I have to remember that my husband's perception of what is going on in the world because of COVID-19 is much different than mine, so managing my expectations of him during this time is key to us staying on the same page."

— Maher

5 LET IT GO

Supporting a Veteran with PTSD, especially during the COVID-19 pandemic, can, at times, be physically and emotionally exhausting. You won't always be prepared with the right coping strategies at the exact moment they are required. Additionally, there are many things beyond our control during this unprecedented time in adapting to COVID-19. All of this should be acknowledged and accepted. Spouses may need to give each other room to move beyond individual incidents and also let go of things out of their control.

"I accept that, for the time being, my husband may be more symptomatic and need to implement more strategies to minimize the impact of the pandemic. I am sure that, since he has come so far in his journey with PTSD, once the crisis has passed, he will be able to recalibrate."

— Lamrock

CONCLUSION

Although there may be an increase in the symptoms of some Veterans with PTSD during the COVID-19 pandemic, accepting this possibility, keeping the lines of communication open and seeking out appropriate supports, are useful coping strategies spouses of military Veterans with PTSD can use to lessen its impact.

"It is not easy some days, but I know how far I have come, how far my family has come, and I won't let this pandemic take away our hard work over the years; we will get through this – together."

— Maher

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DISCLAIMER

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Impressions of a Veteran recovering from operational stress injuries during the COVID-19 pandemic

Ken Osborne[a]

I am a Veteran, diagnosed in 2015 with posttraumatic stress disorder (PTSD) from my deployments to Afghanistan. I served for 24 years in the Canadian Armed Forces (CAF) and have only been out of the Regular Force since 2016. I served in Bosnia-Herzegovina and twice in Afghanistan. My first deployment was in support of the warfighting; the second was in a rule of law advisory capacity.

For me, as for many Afghanistan Veterans, resettlement back to civilian life was not without its challenges. For the last four years, I have been assisted in the transition by the St. Joseph's Hospital Operational Stress Injury (OSI) Clinic in Toronto, Ontario. I am eternally grateful for the clinic's support and, in particular, a psychiatrist who has made, and continues to make, a significant contribution to my recovery. Most instrumental has been Alison, my wonderful and beautiful spouse of 29 years. She has borne the brunt of my military service, and without her, I could not navigate this terrain.

Having made the transition to civilian life, I am now employed with the Law Society of Ontario as Director, Licensing and Accreditation. I typically serve and work at Osgoode Hall in Toronto; however, like many employees in Ontario, in March 2020, I was redeployed to a "remote working condition" at home as the Law Society responded to the unprecedented decisions made by public health authorities and the government due to the COVID-19 pandemic.

I could not help but feel the profound change in our community as I observed how my professional and personal surroundings were affected by the pandemic. As people moved to socially distance themselves and limit physical proximity to defend against the disease, it felt initially to me at least as if it found a new host in the social, economic and political fabric of the province.

There had also been a profound change in me since I began to work from home. The term "remote working condition" rang of "deployment." Not since my last tour to Afghanistan in 2010 had I experienced the complete and utter blurring of the sacred line that separates deployment from garrison or – more acutely now in my civilian life – the distinction between work and home. I have had a retrogression of sorts. Since the pandemic confined me to working from home, I could not shake the feeling that I was going back to Afghanistan, and the decision was not mine.

What made this feeling strange is that it came over me in my very comfortable surroundings. I was at a place where I was safe, where I could be myself and feel secure. Yet, in light of the pandemic, it was easy to set aside the idea that one's home was like a forward operating base's gabion that separates relative safety from a threat.

When I did leave my home, it was not without a feeling of vigilance. Like a counterinsurgency, the pandemic obscured moral boundaries, making it is easy to become trapped in the idea that a friendly face or a casual bystander could somehow be menacing to me, or that my proximity to them may be equally a danger.

Stranger still was being near family. Working from home placed me closer to the people that I love and who love me. Many viewed this opportunity as a remarkable feature in their professional lives, but the context felt different to me. For years, and most certainly since my return from Afghanistan, I have worked very hard, both emotionally and physically, to separate the places I serve from the very special places I share with my family. Maintaining these solitudes is not easy and was more difficult during the pandemic. COVID-19 obscured the lines, such that I could not help but feel I was going back to Afghanistan.

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Logically, I know I'm not really going back there. There was nothing in my "remote working condition" that required me to do so. I will never have to go back to a place like Afghanistan, or to serve as I did while I was deployed there, unless I choose to do so. Indeed, the choice is mine to make and unlike those who bear the full brunt of the pandemic, my mental well-being from such places is secure.

However, there are others at risk. What my experience tells me is that it is our doctors, nurses, health care professionals, law enforcement, firefighters, and emergency services personnel who are squarely facing the trauma of the pandemic. By comparison, the impact of COVID-19 on me as a Veteran with PTSD is really just transmogrifying.

COMPETING INTERESTS

Ken Osborne is a Commissioner with the Soldiers Aid Commission of Ontario. This article reflects his own personal thoughts and beliefs.

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The diary of an operational stress injury clinic psychiatrist during the COVID-19 pandemic

J. Don Richardson[a,b,c,d]

THE SHIFTING LANDSCAPE OF A PANDEMIC

How quickly things have changed. In January 2020, COVID-19 was considered a distant problem, primarily for a region in China. There was a consensus among Canadians; it was not necessarily worse than the seasonal flu and it primarily impacted only those travelling to affected regions. By February, COVID-19 had spread to Italy, but still, in Canada, it was viewed as an outlier and, for the most part, our lives were unaffected. The federal and provincial governments considered the risk of an outbreak in the community very low. Only a few short weeks later, however, things changed dramatically.

Within two days of my return from Hawaii, on March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic.[1] Initially, a 14-day self-isolation period was recommended for travellers returning to Canada from other countries. If you were asymptomatic as a health care provider; however, it was recommended you attend work, self-monitor symptoms, and only self-isolate if you became symptomatic. This directive quickly changed to self-isolation and remote work for everyone, regardless of symptoms, unless you were required to be physically present at your place of employment. As a result, I had a head start on working remotely from home.

Then, everything changed again. Social distancing measures were enacted by provinces and municipalities. Schools closed and academic and university programs moved online. Some provinces passed emergency measures acts and ordered all but essential businesses closed in an effort to slow the spread of COVID-19. Following the Ontario Ministry of Health's directive, hospitals were directed to move to essential services in order to prepare for a potential surge in COVID-19 patients.

ADAPTING TO THE NEW NORMAL

St. Joseph's Operational Stress Injury (OSI) Clinic is funded by Veterans Affairs Canada and is mandated to assess and treat Veterans, serving members of the Canadian Armed Forces and eligible members of the Royal Canadian Mounted Police (RCMP) who have service-related psychiatric conditions, such as posttraumatic stress disorder (PTSD) and other operational stress injuries (OSIs). St. Joseph's OSI Clinic is embedded within a large tertiary health care centre, St. Joseph's Health Care London, in Ontario, which quickly moved to pandemic planning and establishing essential services, including priorities for ambulatory care. Our centre had to establish essential services for Veterans, including new consultations, while maintaining services to our existing patients. From a Veteran perspective, an initiating psychiatric assessment might be required to determine a link between their current psychiatric condition and their military service – a prerequisite to accessing services and benefits from Veterans Affairs Canada.

As clinicians, we had to quickly migrate from our usual comfort of face-to-face care to what has become well-known as "virtual" care. Institutions quickly moved face-to-face meetings to videoconferencing as "social distancing" became the norm. The use of secure videoconferencing platforms, such as the one provided by the Ontario Telemedicine Network, were previously only utilized to connect with Veterans living in remote areas. They have now become standard for all outpatient

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follow-up appointments and new consultations during the pandemic.

We also had to swiftly adapt to working from home and away from our clients and colleagues, in order to minimize the risk of COVID-19 exposure to ourselves and others. Most clinicians adjusted to this transition quickly and, to our surprise, most Veterans also adapted well to the move to virtual care. Veterans took well to the use of both high-tech, secure, videoconferencing and the low-tech, but reliable, telephone for appointments.

In my clinical experience, as a psychiatrist, it can be challenging to establish trust, especially in Veterans who have been exposed to trauma or who might feel a sense of betrayal toward organizations. Attempting to establish a rapport using virtual care or telemedicine can be even more challenging. As clinicians, most of our training and experience is in face-to-face assessment and treatment. In virtual care, that technology might not always be stable, and we might have to also rely on more subtle clues including changes to a patient's voice, rather than relying on visual cues such as body language.

TREATING VETERANS VIRTUALLY

For many Veterans, especially those with PTSD, social distancing and self-isolation has been their norm for many years.[2] Therefore, many have reported adapting well to the physical distancing restrictions imposed. Their hypervigilance and constant need to scan for potential threat has become more of a norm for the general population and some Veterans now describe to me fitting in more easily. Tele-psychiatry may also provide a sense of control and safety for Veterans with PTSD, as it allows them to seek treatment from the comfort of their own homes. Tele-psychiatry may also provide an opportunity to seek treatment without the added stigma of attending a mental health facility.[3]

However, I have noticed other stressors for Veterans with PTSD are gradually becoming more evident, especially due to the added factors of children and spouses being home due to school and work closures. Furthermore, job loss caused by the pandemic can increase financial stress, making PTSD arousal and reactivity symptoms, especially irritability, more prominent. Some Veterans struggling with addictions who typically rely on group-based peer support, such as Alcoholics Anonymous, as their primary source of support to combat addictions, reported struggling more with the face-to-face meeting cancellations. Although virtual programs for addictions are available, some Veterans may not find them suitable. This increased social isolation and loneliness, compounded by economic stress, could increase the risk of suicide.[4]

Treatment has also been affected by the COVID-19 pandemic. Although in my clinical opinion pharmacotherapy can easily be adapted to virtual psychiatric care, it can be more difficult for clinicians to adapt and adjust psychotherapies, such as cognitive behavioural psychotherapy (CBT) or behavioural activation, to virtual platforms. Although virtual therapy has been found to be as effective as in-person therapy in Veterans,[5] the trauma-focused psychotherapy might need to be accommodated, and clinicians need to assess whether it is safe to continue virtually, or if the focus of the psychotherapy should move to more supportive treatment, possibly delaying trauma-focused psychotherapy and thereby prolonging a Veteran's suffering from PTSD. Internet-delivered CBT (iCBT), is widely available, but evidence for its efficacy to treat PTSD in Veterans is in its infancy.[6] Clinicians also have to help Veterans navigate the proliferation of mental health apps available. Research is desperately needed to better understand the impact of a pandemic on high-risk populations[7] such as Veterans.

COPING AS A CLINICIAN

As with most clinicians, not only did I have to cope with my own anxiety and fear of becoming infected with COVID-19, but also with the fear of infecting my family. As hospitals planned to redeploy physicians – regardless of their specialty – to meet the potential medical needs of COVID-19 patients, the real possibility of being reassigned to different departments, including emergency psychiatry or inpatient units, or being redeployed to a completely different field of medicine, further heightened anxiety. For me, as is probably the case for many of my colleagues, it has been many years since we practised in other fields, including internal or family medicine. There is understandable anxiety in being competent if redeployed to a different field of medicine.[3] There is also a worry about who will care for our patients if we are redeployed.

Not being on the front line of the pandemic has created a genuine desire for me to help my colleagues who are working on the frontline. Many of my colleagues have volunteered to provide mental health support to health care providers working directly with COVID-19 patients, including those in intensive care units and

emergency departments who might be at higher risk of moral injury and moral distress. During the pandemic, frontline health care staff are working under extreme conditions and are forced to make difficult decisions, such as how to plan for and allocate limited resources (e.g., ventilators), support family members of patients in quarantine, and balance their own health care needs with those of their patients.[8]

Moral injury, which finds its origin in military psychiatry, occurs when we witness, perpetrate, or fail to prevent acts that transgress a deeply held moral code or ethical beliefs.[9] Moral injury is not a psychiatric illness, but the intense feelings of guilt and shame that often occur in moral injury can contribute to psychiatric conditions of depression and PTSD.[8] By supporting our frontline health care clinicians, we can make use of our training in military psychiatry, and our expertise in moral injury, to contribute to the COVID-19 response.

Although it is still too early to truly appreciate the impact of the COVID-19 pandemic, you can hypothesize being prepared for the pandemic, and having support from your peers, leaders, and your work organization will likely influence outcomes.[8] We remain hopeful and focused, and make use of our training and expertise, to continue to care for our Veteran patients and to offer support to our frontline colleagues.

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Practice implications and clinical observations: Virtual care for a military/Veteran population during the COVID-19 pandemic

Maya Roth[a,b,c]

TRANSITION TO VIRTUAL CARE

In late March 2020, as the COVID-19 pandemic rapidly took hold of daily life in Canada, St. Joseph's Health Care London's Operational Stress Injury (OSI) Clinic, operating out of London, Hamilton, and Toronto, Ontario, rapidly moved to provide virtual services. The clinic is federally funded by Veterans Affairs Canada (VAC) to provide assessment and treatment to Canadian Armed Forces (CAF) and Royal Canadian Mounted Police (RCMP) personnel and Veterans as well as their families, and is part of the larger OSI Clinic Network.

In order to minimize the impact on patient care, the OSI Clinic leadership team, as well as the larger organizational leadership, quickly developed processes for transforming the face-to-face care to which clinicians and patients have long been accustomed to virtual care. Months later, clinicians and patients are growing more comfortable with virtual care in the same way we have all learned to navigate physical distancing and other facets of the "new normal." At this phase in the pandemic response, I had the opportunity to reflect upon practice implications of transitioning to virtual care, and my personal observations of treating the military/Veteran population during this extraordinary time, which is considered best practice.[1]

PRACTICE IMPLICATIONS FOR VIRTUAL PSYCHOTHERAPY

As regulated health professionals, reviewing limits of confidentiality and safeguarding privacy are standard practices within the clinic walls. With a transition to virtual care, it became clear new permutations of these ethical cornerstones were necessary. For example, the confidentiality inherent in face-to-face communication was challenged by communication via telehealth platforms.[2,3] A discussion of possible safety and engagement concerns that could impact participation in virtual care was reviewed with patients, and patients were screened for appropriateness for virtual care using clinical and logistical principles. Upon initiating virtual care, clinicians reviewed the patient's address and phone number in case their safety was in jeopardy. Patients were also encouraged to share their reservations about proceeding with virtual care if needed.

Our organization largely endorsed the Ontario Telemedicine Network (OTN), and clinicians and patients quickly learned to adapt to the less-than-perfect audio and visual quality. The main difficulty in using OTN is the audio and visual glitches that occur during peak use, likely due to the strain on the system. These glitches can occur right from the start of a session, or unexpectedly throughout a session. Audio delays are also common, resulting in the clinician and patient talking over each other at times. It became important to address the challenges of OTN at the beginning of virtual care and identify a back-up plan (e.g., continuing the session by telephone if technology deteriorated). This was essential for managing patient expectations, engagement and frustration. Given that both clinicians and patients were joining sessions or assessments from home, it was imperative that patients were situated in a private space, and to reassure them that we, as clinicians, were likewise in a private space, in spite of the sounds that often emanated from spouses and children during clinical care.

Clinician comfort with technology and acclimating to remote system access was a learning curve for all. Streamlining assessment and treatment processes was

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necessary for virtual administration. For assessments, cognitive screening measures with items that could not be administered virtually were traded for more appropriate measures, and self-report questionnaires were eliminated. This decision was made due to the inability of patients to complete our large self-report questionnaire package electronically and securely at this time. We explored the benefit of clinicians administering these questionnaires during the session and felt that this would detract from the validity of these questionnaires. Changes to the structured clinical and diagnostic interviews were, thankfully, unnecessary. With regard to treatment, patients were supported in completing outcome monitoring questionnaires electronically prior to the session, and clinicians became adept at sharing relevant treatment handouts within the OTN platform and using the organization's secure file transfer system. It is important to note that patients can complete questionnaires through our secure outcome monitoring system once they are engaged in treatment at the clinic.

I found the majority of my treatment patients adjusted well to virtual psychotherapy and expressed consistent appreciation for the continuity of care afforded by virtual services, despite the technical challenges. Some patients did require support to access OTN and complete outcome monitoring questionnaires; however, they quickly habituated to this mode of treatment. Most of my treatment patients have been in my care for some time, and we could rely on our established therapeutic relationship. For the few new patients who initiated treatment during the pandemic, and whom I have never met in person, I found it relatively easy to establish and maintain a strong therapeutic relationship via telehealth. It should be noted that some assessment and treatment patients declined virtual care. This was attributable to a number of factors including age, comfort with and access to technology, clinical factors (i.e., heightened irritability, cognitive difficulties, and paranoia), and patient preference for face-to-face care.

Providing assessment and treatment services virtually has a number of benefits and limitations. During such a highly stressful and anxious time, both clinicians and patients have benefited from being able to provide and access assessment and treatment services from the safety of their homes. The ability to provide continued care to my patients, and make a meaningful contribution to their well-being during a time when the world was turned upside down, helped mitigate my own stress and anxiety. Importantly, it is becoming clear that most evidence-based treatments for posttraumatic stress disorder (PTSD), depression, and anxiety are robust and effective in virtual administration, as has been widely reported in the research literature.[4,5,6,7,8,9,10]

However, I quickly learned 1 hour of virtual care was not equivalent to an hour of face-to-face care, due to the emotional and cognitive demands. I fatigued more quickly during a virtual session due to heightened attention to nonverbal communication, paired with the toll of staring at a computer screen. As this awareness grew, I also recognized signs of virtual care fatigue in my patients. It has been important to tailor the length of treatment sessions accordingly and in a client-centred way. Finally, it has become critical to remain compassionate and mindful of the toll of juggling clinical and family roles and remembering many patients are in the same situation. It is interesting how my son's inadvertent interruption of a therapy session actually facilitated a stronger connection with one patient – it was a reminder we are all in this together.

MILITARY/VETERAN POPULATION-SPECIFIC OBSERVATIONS

In addition to managing the transition to virtual care in the provision of mental health services, I became aware of response patterns and unique challenges that may be relevant to clinicians working with a military/Veteran population.

Over the past few months, I witnessed consistent patient responses to the protracted pandemic and its impact on day-to-day life. Initially, many patients were able to access their almost hard-wired military training. For example, a number of patients mentioned feeling less anxious about the pandemic because of their training in emergency preparedness and comfort with enduring high-stress situations during training and deployment. One patient shared that his tenure of "taking orders" in the CAF minimized the strain of following federal, provincial and public health directives. These factors appear to have increased patients' emotional resiliency during this extraordinary time.

Some of my patients exhibited a posttraumatic growth-like response to the pandemic.[11] Specifically, one patient shared the pandemic provided him with some much-needed perspective amid the high-stakes virus. A number of other patients have reflected, with appreciation, on the financial stability afforded to them from VAC in light of the countless job losses reported

in the media. This runs contrary to the frequent media coverage of Veterans' dissatisfaction with VAC and the financial support they receive.

The experience of social distancing and lockdowns has, for a number of my patients, facilitated a shared connection they have been missing for years with the larger population. Many have wryly noted it is reassuring to see people engaging in avoidance, paranoia and mistrust of others. One patient reported the collective experience of the pandemic had decreased his sense of isolation. Despite the social isolation and relationship strain common to many Canadians, some patients have relished the opportunity to "bunker down," while others expressed the sense of loss and grief for "normal" life felt by many. Interestingly, many patients who struggled to challenge their situational avoidance with evidence-based treatment strategies expressed a yearning to engage freely in the in-vivo exposure they previously avoided.

I also learned that providing treatment by videoconferencing was triggering for some of my patients due to their military/policing trade. Therefore, I had to adapt to treatment by telephone without the connectedness videoconferencing facilitates. After over a decade of working with a military/Veteran population, I was reminded to be cautious about the impact virtual care might have on patients by virtue of their occupation or trauma. The opportunity to continually learn is ever-present.

The world goes on, even during a pandemic, and as clinicians we need to be aware of national events and foreign affairs that may impact our patient population, such as the mass shooting in Nova Scotia, the Federal Fire Arms Ban, the Stalker 22 and Snowbird crashes, and George Floyd's death and its aftermath. The overlay of these national and international events during the challenging time associated with the pandemic has been important to address in treatment. For my still-serving CAF clients, I've noticed a growing sense of concern about the mental and physical health toll of deployments to long-term care facilities in Québec and Ontario.

In closing, I am proud of how quickly our clinic transitioned to virtual services, with an emphasis on patient-centred and quality care. I have appreciated the collaboration and endurance of my patients and their consistent appreciation for the care received. Together, we learned to be flexible and focus on being in the moment, and I came to rely on the effectiveness of virtual psychotherapy. Given the large catchment area we serve, and the efficacy of virtual care, the possibility of continuing virtual psychotherapy for clinically appropriate patients is being reviewed. In the midst of the high stress of the past few months, I am grateful to step back and appreciate the silver linings of virtual care during this unprecedented time.

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