
**Military Personnel and COVID-19:
An Exploratory Scoping Review**

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Contents

| | |
|---|-----------|
| PREFACE | 3 |
| ABSTRACT | 4 |
| INTRODUCTION | 4 |
| <i>COVID-19</i> | 5 |
| <i>Military</i> | 5 |
| METHOD | 5 |
| RESULTS | 8 |
| <i>Key themes</i> | 8 |
| <i>Summary of Themes – Table 5</i> | 11 |
| <i>Summary of Themes – Table 6</i> | 15 |
| DISCUSSION | 21 |
| <i>The Role of the Military during COVID-19</i> | 21 |
| <i>The effects COVID-19 had on Military Personnel</i> | 22 |
| CONCLUSIONS AND RECOMMENDATIONS | 23 |
| <i>Key Recommendations</i> | 23 |
| ACKNOWLEDGEMENTS | 24 |
| REFERENCES | 24 |
| APPENDIX 1 | 28 |
| APPENDIX 2 | 29 |
| APPENDIX 3 | 30 |
| APPENDIX 4 | 39 |

PREFACE

This report is an initial exploratory scoping review prepared for Chaplain Dan Hynes (Department of Spiritual Health and Wellbeing, Joint Health Command, Australian Defence Force, Canberra, ACT, Australia) and Chaplain Mark Willis (Director General, Chaplaincy Branch, Royal Australian Air Force, Australian Defence Force, Canberra, ACT, Australia). Support for this report was provided by La Trobe University, Department of Public Health Participatory Field Placement Internship program (PHE3PPF).

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ABSTRACT

Introduction: COVID-19 has led to many countries enduring harsh lockdowns and preventative measures being enforced. Military forces have assisted in multiple ways to inhibit the pandemic and ensure the safety and wellbeing of their community. Along with stringent responsibilities, COVID-19 has taken a toll on the health and wellbeing of military personnel. **Aim / Purpose:** The purpose of this report is to (i) obtain global information on the military's role and responsibilities during the pandemic, while (2) also exploring the health and wellbeing of military personnel during COVID-19. **Method:** A scoping review framework modified from Arksey and O'Malley (2005) was utilised to map the research area following a predetermined process of: (i) identifying the research question, (ii) developing inclusion and exclusion criterion, (iii) identifying relevant studies, (iv) charting the data, and (v) collating, summarising and reporting the results. **Results:** The scoping review identified literature considering 20 countries. Following the two main aims, ten key themes were identified throughout the literature. Correlating with the first aim the following four themes were discernible: (1) resource provision, (2) preventative measures within the military, (3) transportation and (4) enforcing rules in population. Correlating with the second aim, a total of six themes were identified: (5) mental health, (6) help provided and repercussions, (7) inconvenience, (8) suggestions, (9) COVID-19 cases and the (10) military role. **Discussion:** The pandemic led the military to have a substantial involvement in preventative measures and enforcing temporary laws. With the multiple strenuous missions given to the military during the pandemic, the health and wellbeing of the personnel became a considerable concern. **Conclusion:** The various literature found indicated the multiple roles the military had during the COVID-19 pandemic. These included, but were not limited to, transportation of patients, the delivery of resources, construction of makeshift hospitals, medical assistance, and disposal of the deceased. It was also found that the extent of the responsibilities of military personnel during COVID-19 impacted their health and wellbeing, especially their mental health.

Keywords: Military, Defence Force, Army, Navy, Air Force, Corona Virus and COVID-19

INTRODUCTION

COVID-19 changed the lifestyle of individuals around the world and the operating procedures of most organisations. The severity of the virus alarmed governments globally, enforcing urgent preventative measures. With such a high demand of hospitalisation and isolation enforcement, governments utilised the military to assist with temporary restrictions. The military were involved in numerous roles in assisting to reduce the spread and infection rate of COVID-19; this report explores the various ways the military were engaged internationally.

COVID-19

The emergence of a mysterious virus from Wuhan, China during November 2019, later classified as COVID-19 (WHO, 2020) was associated with a multitude of symptoms including cough, fever, sore throat and loss of taste, but which could lead to cardiovascular, respiratory and/or renal failure, then ultimately death (Mayo Clinic, 2020). January 2020, the outbreak had reached 18 countries and human to human transmission was confirmed. By March 11th, the disease had spread to 114 countries, prompting the WHO to declare it as a pandemic (WHO, 2020). It has caused a worldwide catastrophe where many countries have had to endure strict shutdowns to prevent further spread of the virus (Cascella et al. 2020).

Military

During these unprecedented times and the severity of the situation, military forces around the world were seen undertaking roles outside of their regular responsibilities. Due to their unique training and constant state of preparedness and readiness for sudden changes, they became the perfect response to assist with the COVID-19 circumstance (Mcgee & Michael, 2020). However, their involvement put them at a risk for stigmatisation and for developing the virus themselves. With regard to their normal role, the pandemic also interfered with a military forces' ability to undertake their usual missions (Segal, et al., 2020). Changes to how militaries operate was necessary to accommodate for new COVID-19 guidelines. This review aimed to delve into the involvement of the military around the world with respect to COVID-19 and how the health and well-being of military personnel were affected.

PURPOSE / AIMS

The overall purpose of this scoping review is to search and obtain any literature relating to:

- (i) The role of the military during COVID-19
- (ii) The biological, psychological, and social health and wellbeing of military personnel during COVID-19.

METHOD

A scoping review framework modified from Arksey and O'Malley (2005) was utilised to map the research area following a predetermined process of: (i) identifying the research question, (ii) developing inclusion and exclusion criterion, (iii) identifying relevant studies, (iv) charting the data, and (v) collating, summarising and reporting the results.

(i) *Identifying the research question*

The research questions which were developed using the PICO (Population, Intervention, Comparison, Outcome) technique (Fineout-Overholt & Johnston, 2005) (refer to [Table 1](#) & [Table 2](#)) are specified below:

- (i) What has been the role of the military during COVID-19?
- (ii) How has the (a) biological, (b) psychological and (c) social wellbeing of military personnel been affected during COVID-19?

Table 1*PICO research question development*

| Population | Intervention/ Exposure | Intervention/ Exposure | Comparison | Outcome |
|------------------------|---------------------------|---------------------------|---------------------|---|
| Military/Defence Force | COVID-19 | All Interventions | All military Forces | This review of the literature is seeking a record of <i>all</i> outcomes. |

Table 2*PICO element, related synonyms and database search terms*

| PICO Element | Synonyms | Database Search Terms |
|--------------------------------|------------------|---|
| Military/ Defence Force | - Military | “Defence Force Personnel*” OR |
| | - Army | “Defense Force Personnel*” OR |
| | - Air Force | Militar* OR |
| | - Navy | Navy OR |
| | - Defence Force | “Special Force*” OR |
| | - Defense Force | Army OR |
| | - Special Forces | “Naval Warfare Service*” OR |
| | - Coast Guard | “Marine Corp*” OR |
| COVID-19 | - Corona Virus | “Air Force*” OR |
| | - COVID-19 | “Armed Forces” OR |
| | - Sars-2-Cov | “Air Warfare Service*” COVID-19 OR “Corona Virus*” OR Sars-2-Cov |

Table 3*PICO research question development*

| Population | Intervention/ Exposure | Intervention/ Exposure | Comparison | Outcome |
|------------------------|--|---------------------------|------------|---|
| Military/Defence Force | Biological/ Psychological/ Social/ Wellbeing | COVID-19 | Nil | This review of the literature is seeking a record of <i>all</i> outcomes. |

Table 4*PICO element, related synonyms and database search terms*

| PICO Element | Synonyms | Database Search Terms |
|---|---|--|
| Military/ Defence Force | <ul style="list-style-type: none"> - Military - Army - Air Force - Navy - Defence Force - Defense Force - Special Forces - Coast Guard | “Defence Force Personnel*” OR “Defense Force Personnel*” OR Militar* OR Navy OR “Special Force*” OR Army OR “Naval Warfare Service*” OR “Marine Corp*” OR “Air Force*” OR “Armed Forces” OR “Air Warfare Service*” |
| Biological/ Psychological/ Social/ Spiritual Health | <ul style="list-style-type: none"> - Biological Health - Psychological Health - Social Health - Spiritual Health - Wellbeing or “well-being” or well-being - Mental Health - Physical Health - Emotional Health - Health | Wellbeing* OR “well-being” OR Well-being OR “mental health” OR “emotional health OR “physical health” OR “biological health” OR “psychological health” OR “social health” |
| COVID-19 | <ul style="list-style-type: none"> - Corona Virus - COVID-19 - Sars-2-Cov | COVID-19 OR “Corona Virus*” OR Sars-2-Cov |

(ii) Inclusion and exclusion criterion for study selection

This scoping review will only include peer reviewed articles and resources published during or after 2019. The focus of the search will only cover aspects of COVID-19 relating to its impact upon the biological/physiological, psychological and social well-being of military personnel. Literature relating to the ‘spiritual health’ of military personnel regarding COVID-19 was not included in this search as it requires a separate search exploring ‘spirituality/religion/ pastoral care’ and the role of clergy/chaplains during COVID-19 (Carey, Swift & Burton, 2020).

(iii) Identifying relevant studies

The PICO strategy (Fineout-Overholt & Johnston, 2005) was utilised to identify specific search elements, synonyms and key database search terms so as to identify relevant literature (refer [Table 2](#) & [Table 4](#)). All available databases were used for this search namely: Medline, CINAHL, Scopus, PsychInfo, Google Scholar, COCHRANE Library and ProQuest.

(iv) Charting the Data

All articles were then screened for duplicates and relevancy (refer [Appendix 1](#) & [Appendix 2](#)). Details and abstracts of final articles deemed valid for thematic analysis were combined at [Appendix 3](#) and [Appendix 4](#). Relevant themes based on the findings of each article were determined by agreement between authors and indicated at [Table 5](#) and [Table 6](#). Each theme is also identified and numerically coded in [Appendix 3](#) and [Appendix 4](#) and described within the results section.

RESULTS

(v) Collating, summarising and reporting the results

Key themes

Following the two main aims (noted earlier), ten key themes were identified throughout the literature (refer [Figure 1](#)). Correlating with Question 1 the following four themes were discernible: (1) resource provision, (2) preventative measures within the military, (3) transportation and (4) enforcing rules in population. Correlating with the Question 2, a total of six themes were identified: (5) mental health, (6) help provided and repercussions, (7) inconvenience, (8) suggestions, (9) COVID-19 cases and (10) military role (refer [Figure 1](#)).

[Table 3](#) and [Table 4](#) list the research authors and the various themes identified within their work. [Appendix 3](#) and [Appendix 4](#) list the identified articles and their abstract summaries.

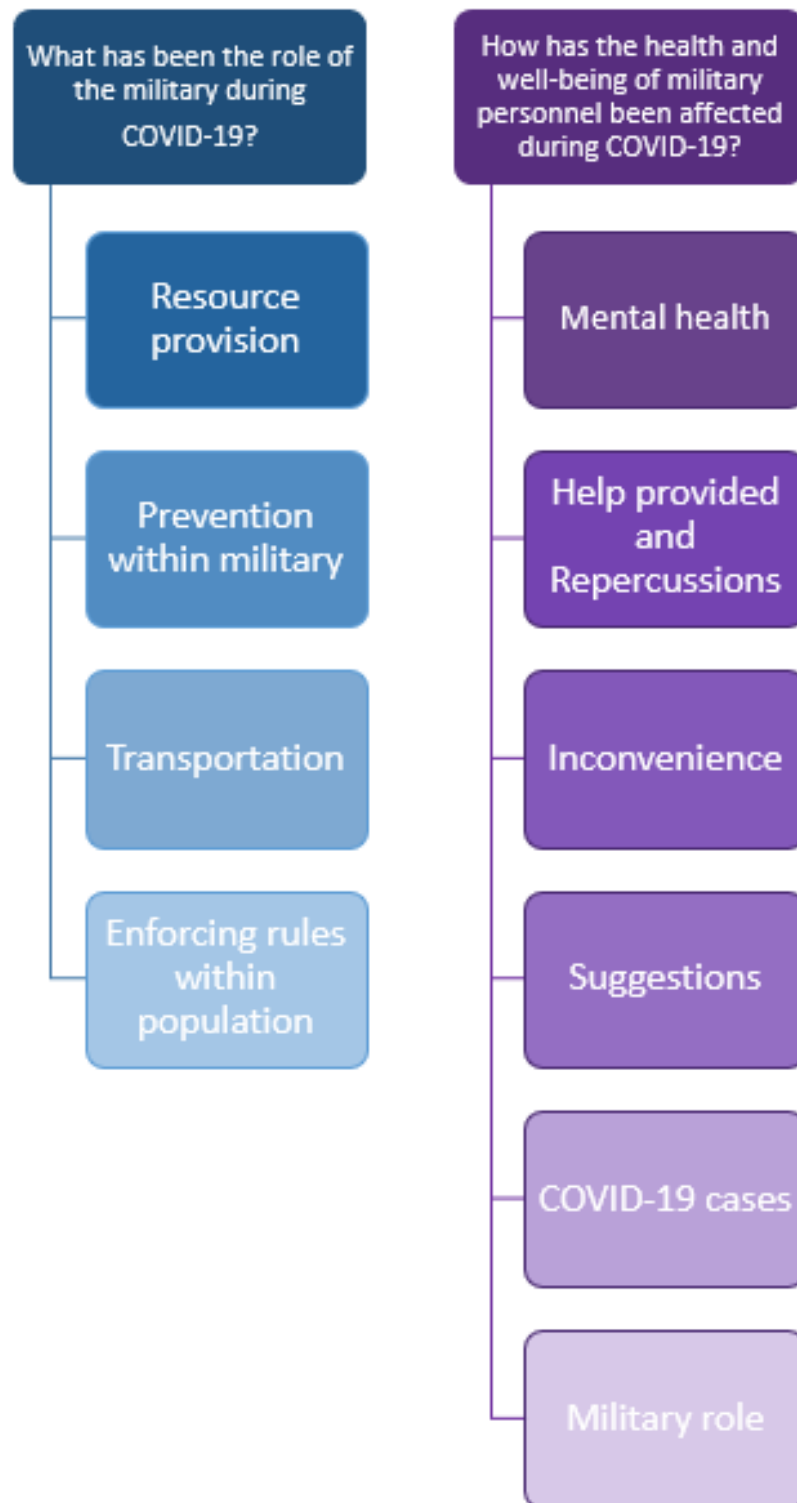
Figure 1 – Key Themes

Table 5*Themes identified within the literature*

| Author/s (Year) | 1 | 2 | 3 | 4 |
|--|----------|----------|----------|----------|
| Anon (2020) | ✓ | ✓ | | |
| Banerji, A. (2020) | ✓ | ✓ | | |
| Borges, L., et al. (2020) | | | ✓ | |
| Costa, I., et al. (2020) | ✓ | | | |
| Danguay des Deserts, M., et al. (2020) | ✓ | ✓ | ✓ | |
| Hodgetts, J., et al. (2020) | | ✓ | | |
| Jayasuriya, D. (2020) | ✓ | | | ✓ |
| Kline, J., Donovan, A. (2020) | | ✓ | | |
| Mansoor, S., et al. (2020) | ✓ | | | |
| Marcus, J., et al. (2020) | | ✓ | | |
| McGee, L., Michael, C. (2020) | ✓ | | | |
| Oh, H., Woong, S. (2020) | | ✓ | | |
| Opillard, F., et al. (2020) | ✓ | | ✓ | |
| Pasquier, P., et al (2020) | ✓ | | ✓ | |
| Pirnay, J., et al (2020) | | ✓ | | |
| Rajbhandari, B., et al. (2020) | | | ✓ | |
| Sammito, S., et al. (2020) | | | ✓ | |
| Segal, D., et al. (2020) | | ✓ | | |
| Shirzad, H., et al. (2020) | | | | ✓ |
| Stucky, C., et al (2020) | ✓ | | | |
| Trias, A. (2020) | ✓ | | ✓ | ✓ |
| Vidua, R., et al. (2020) | ✓ | | | |
| Watts, G., Wilkinson, E. (2020) | ✓ | | | |
| Total: 23 | 13 | 9 | 7 | 3 |

Note: Themes are: (1) Resource Provision, (2) Preventative measures within the military, (3) Transportation and (4) Enforcing rules within the population. Abstracts for each article are provided in [Appendix 2](#).

Summary of Themes – Table 5

Theme 1 – Resource Provision

The theme of resource provision was the most prominent theme within the literature given the scope of military involvement during COVID-19. Many subthemes were discernible and will be mentioned throughout this section. A number of armed forces around the world have been undertaking duties outside their regular role to help their nation affected by the pandemic (Watts & Wilkinson, 2020). These include tasks such as providing aid and relief through delivering supplies, packing goods and guarding shipments (Trias, 2020; Mcgee & Michael., 2020).

One subtheme present in resource provision has been soldiers assisting with disposing of the deceased, due to the overwhelmingly large number of deaths and shortage of coffins (Vidua et al., 2020). This has been seen in countries such as Spain who deployed military personnel to manage dead bodies in care homes (Trias, 2020). Spain has also been using their military forces to construct makeshift hospitals (Trias, 2020; Opillard, Palle & Michelis, 2020).

Constructing makeshift hospitals and preparing resources for patients was another subtheme within this literature (Anon, 2020; Stucky et al., 2020). In the US, makeshift hospitals were created on ships to accommodate patients (Costa, et al., 2020). France was one of the countries which utilised military personnel for the construction and running of makeshift hospitals. They also appointed military personnel to create makeshift intensive care units to accommodate the growing number of patients (Danguay des Deserts et al, 2020; Pasquier et al, 2020; Opillard, Palle & Michelis, 2020). Two main objectives guided the need for extra space; to treat COVID-19 patients and to protect caregivers (Pasquier et al., 2020). The French government also relied on their military medical supply chain to support all facilities in France and overseas to cope with supply shortages (Pasquier et al, 2020).

In India, the army was used to create quarantine facilities for evacuees returning to India from China, Italy and Japan (Banerji, 2020). The Sri Lankan army and navy involved constructing quarantine centres along with contact tracing for citizens who had been overseas (Jayasuriya, 2020). The Pakistan Army Medical Corps prepared for surges of COVID-19 patients by allocating beds and preparing designated wards for quarantining (Mansoor et al, 2020). The UK Ministry of Defence was involved with delivering bulk supplies of oxygen and

building 'Nightingale Field Hospitals' across the UK on short notice (Watts & Wilkinson, 2020; Opillard, Palle, Michelis., 2020; Withnall, 2020; Stirling, 2020).

Theme 2 - Preventative measures within military

It is prominent within the literature that preventative measures against COVID-19 within the military have been of utmost importance. An outbreak of the virus within a military force could pertain to a reduction of their capability to complete missions (Segal et al, 2020). Military forces tend to operate within a close-contact environment, increasing the risk of spreading such a contagious virus (Oh & Woong, 2020). Changes within military operations and guidelines have been seen worldwide to accommodate the current pandemic circumstance.

For example, the Indian Armed Forces prioritised breaking the chain of transmission by establishing COVID and Non-COVID hospitals for both military personnel and civilians aiming to reduce cross-contamination (Banerji, 2020). Other means utilised in India, to keep their personnel healthy, was through education about the virus, disinfection of offices, barracks, residential areas and public spaces, quarantining, contact tracing and screening staff (Banerji, 2020). The French similarly divided hospitals into three levels, each with different requirements of prevention equipment to keep their staff safe (Danguy des Deserts, 2020).

The Israeli Defence Force and the military in South Korea implemented a curfew to reduce the amount of exposure military personnel had with civilians (Segal et al, 2020; Oh & Woon, 2020). This consequently reduced the amount of people using public transport (Segal et al, 2020). Military workers who were not deemed critically urgent were kept home and the military force utilised video-assisted conferencing for communication (Segal et al, 2020; Oh & Woon, 2020). They closed dining facilities across Israel and enforced strict distancing rules if particular facilities could not be closed (Segal et al, 2020). South Korea implemented mandatory face masks and temperature checks when entering military bases (Oh & Woong, 2020). A strict isolation period was endured by anyone who was in close contact of a COVID-19 case, to prevent the virus entering the military facilities. In the UK, the Armed Forces successfully delivered remote training in these circumstances to adhere to strict social distancing guidelines (Hodgetts et al, 2020).

Belgium equipped training camps with testing facilities and implemented mandatory testing before sending soldiers on missions (Pirnay et al, 2020). In some cases, dependant on where they were returning from, soldiers were tested after the mission as well. The US President/Government slowly implemented COVID-19 restrictions among its civilian

population leading to disastrous effects, however the US military with regard to its own personnel acted far more quickly, limiting the spread of the virus by enforcing strategies of quarantine, social distancing, early screening of trainees, rapid isolation of persons with suspected cases, and monitored re-entry into training facilities for trainees with positive test results (Kline & Donovan, 2020; Marcus et al, 2020). The U.S. Navy for example, conducted medical screening for each sailor before they were deployed. This included an assessment of symptoms, health checks, review of past COVID-19 tests and an enquiry of exposure (Anonymous, 2020).

Theme 3 – Transportation

As supported by the literature, transportation is another prevalent theme regarding the role of military personnel during COVID-19. Transportation occurred worldwide mostly for the purposes of evacuating their citizens from COVID-19 stricken areas such as Wuhan. For example, the Brazilian military engineered a mission to retrieve citizens in Wuhan in a manner which would not be detrimental to the staff involved (Borges et al., 2020). Precautions were taken with strict planning detailing the steps required including using personal protective equipment, screening passengers and post-flight quarantine. Nepal faced similar difficulties with evacuation plans required for students in Wuhan at the time (Rajbhandari et al, 2020). Their army worked with the police to finalise the evacuation with the army being responsible for the screening of passengers and the post-flight isolation and quarantine requirements.

France, along with other European countries, had military personnel transporting the sick from over-crowded intensive care hospitals to other available facilities (Danguay des Deserts et al, 2020; Trias, 2020; Opillard, Palle & Michelis, 2020). France has used various forms of transport, such as aircrafts, helicopters, road vehicles and ships, to undergo these logistical moves and to assist with balancing over-condensed medical facilities (Opillard, Palle, Michelis, 2020; Pasquier et al., 2020). The German Armed Forces similarly provided air transport from regional hospitals in Italy and France to less overwhelmed hospitals in Germany to relieve over-crowding (Sammito et al., 2020). The military are trained to quickly adjust to situations and had the discipline and organisation to undergo these meticulously planned evacuations (Rajbhandari et al., 2020).

Theme 4 - Enforcing rules in population

To manage the COVID-19 crisis, a multitude of countries chose to employ military personnel to enforce rules within the population. Enforcing quarantine measures, social distancing

guidelines and travel restrictions were some examples of community action undertaken by the military. They supported police to maintain public order by ensuring public health guidelines so as to prevent the pandemic from spreading. This action was demonstrated worldwide throughout Malaysia, France, Italy, Philippines Peru, and Spain who also requested police to enforce curfews, impose travel restrictions and only keep essential establishments open (Trias, 2020). Iran and Sri Lanka saw the same rules being imposed by their military including curfews and travel restrictions (Jayasuriya, 2020; Shrzad et al 2020). The implementation of these rules was not always successful which is why it became a trend globally to involve the military for support (Shirzad et al., 2020). Undertaking such critical roles in a difficult time meant the military was placed at risk of both catching the disease and associated stigma.

Table 6

Themes identified within the literature

| Author/s (Year) | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------------------|----------|----------|----------|----------|----------|-----------|
| Baettig, S., et al (2020) | | | | ✓ | | |
| Bock, S. (2020) | ✓ | | ✓ | | | |
| Gerber, M. R. (2020) | ✓ | ✓ | | | | |
| Gu, R., et al. (2020) | ✓ | ✓ | | | | ✓ |
| Jin-Yang, L., et al. (2020) | ✓ | | | | ✓ | |
| Kebisek, J. (2020) | | | | ✓ | | |
| Marini, C., et al. (2020) | ✓ | ✓ | | | | |
| Myers, U., et al. (2020) | ✓ | ✓ | | | | |
| Nir, I., et al. (2020) | ✓ | | | | | |
| Pan, X., et al. (2020) | ✓ | | | | | |
| Payne, D., et al. (2020) | | | ✓ | ✓ | | |
| Protopopescu, A., et al. (2020) | ✓ | ✓ | | | ✓ | ✓ |
| Riegler, L., et al. (2020) | ✓ | | | | ✓ | |
| Roth, M. (2020) | ✓ | ✓ | | | | |
| Shura, R., et al. (2020) | ✓ | ✓ | | | | |
| Simms, A., et al. (2020) | ✓ | | ✓ | | | |
| Smith, L., et al. (2020) | | ✓ | ✓ | | | |
| Total: 17 | 13 | 8 | 4 | 3 | 3 | 2 |

Note: Themes are: (7) Mental Health, (8) Help provided/repercussions, (9) Inconvenience, (10) COVID-19 Cases, (11) Suggestions, and (12) Military role effects on health and wellbeing. Abstracts for each article are provided in [Appendix 3](#).

Summary of Themes – Table 6

Theme 5 - Mental Health

It is evident, with regard to the literature relating to COVID-19, that mental health is one of the most dominant themes across the literature (refer Table 6), particularly with respect to the health and well-being of current and previous service members as well as their spouses and children. One particular sub-theme consistently highlighted concerns with respect to retired military personnel. Due to many retired veterans having involvement in a previous pandemic torn era (e.g., the Espanol influenza), the current pandemic crisis resurfaced past emotions with respect to previous traumatic experiences. Gerber (2020) articulates how a veteran associated COVID-19 to being similar to his experiences during the Vietnam war. It heightened their mental health symptoms and associated disorders, leading to further mental health decline (Riegler et al. 2020; Shura et al. 2020; Myers et al. 2020).

Reigler et al (2020) also notes, there is already a high percentage of retired veterans who were diagnosed with mental health conditions such as Post Traumatic Stress Disorder (PTSD). By enduring a pandemic such as COVID-19, it released memories and unsettling emotions based on prior experiences. Due to these emotions and memories, it caused some tension in the veteran's home and family life. In addition, Riegler et al (2020) noted that, PTSD can lead veterans who are parents to mistreat their children (p. 291). Being responsible for a dependant while struggling with mental health issues, can also leave children at risk of neglect. With the decline in their mentality and health, that can also cause individuals to neglect their own personal needs and care.

The majority of the military's role during the pandemic was assisting front-line workers with infected patients (Themen1: Resource provision). This type of responsibility however came with its challenges. The high demand for personal protective equipment caused strain on medical workers. Countries globally were requiring a substantial number of face masks and gloves to wear on a regular basis; reducing the supply for clinicians. Limiting the quantity of personal protective equipment caused stress and anxiety to those assisting on the frontline with infected patients (Simms et al., 2020; Protopopescu et al., 2020).

The pandemic led to new challenges and lifestyle changes. The government introduced restrictions and left individuals forced to stay in their homes and limit physical contact. Military personnel were instructed to assist in the restrictive measures and preventative procedures, thus creating emotional strain within their own families. The pandemic and pressure caused by new regulatory tasks caused veterans to endure higher levels of stress and anxiety (Pan et al., 2020; Roth, 2020; Gu et al., 2020; Marini et al., 2020; Jin-Yang et al., 2020). Some personnel were already struggling with mental health issues such as PTSD, moral injury, anxiety and depression; the pandemic therefore increased depressive symptoms. There is a case of a young soldier who was committed to a psychiatric hospital due to the severity of his mental health as a result of COVID-19 (Nir et al., 2020)

In Israel, there was a young male soldier who was involuntarily committed to a psychiatric hospital. He had been placed into quarantine due to exposure to COVID-19; upon his isolation, he had been reported to be acting strangely. The patient had no prior diagnoses or family history of mental health disorders. When word of his refusal for quarantine was revealed, the authorities, family members and military mental health agents were informed. Upon his location, due to the refusal to return to quarantine and his erratic behaviour, he was involuntarily placed into psychiatric care. Although he caused no threat to himself or others physically, yet due to the nature of the episode and his refusal to quarantine, he posed a threat by potentially spreading COVID-19. The male soldier was released after two weeks and diagnosed with a brief psychotic episode (Nir et al., 2020).

Theme 6 – Help Provided and Repercussions

In the hopes of reducing the spread of the virus, COVID-19 restrictions presented many challenges. Individuals were confined to their homes and had limited to no physical contact with their loved ones. For many, this caused mental strain and heartache; individuals already with severe mental health disorders, struggled greatly. The highest population group concerned were veterans. As noted, before, some veterans were already suffering from serious mental health illnesses, such as PTSD and/or moral injury. The pandemic provoked emotional ties to traumatic events heightening their mental disorder; thus, encouraging the need for strong support systems required for veterans.

To deal with such cases the Defence Health Agency (DHA) in the US developed a remote health clinic to assist veterans throughout the pandemic. The telehealth clinic provided numerous aspects of health support through the use of technology and social media (Shura et al., 2020; Myers et al., 2020; Smith et al., 2020). It was highly recognised for its mental health support line. The approach and procedures of telehealth were similar to those the clinicians used within a face-to-face medical setting: they were able to provide these telehealth services via remote setting through the use technology. It allowed for the clinicians to accommodate a wide range of patients and provide more frequent assistance. There were many avenues explored with the access of ‘facetime’, phone calls and messaging. This service became more accessible to veterans; providing them with access to support and medical treatment in the comfort of their home. Similar virtual services were introduced in other countries such as Canada and China (Roth, 2020; Protopopescu et al., 2020; Gu et al., 2020).

The encouragement of moral support for veterans was consistently suggested (Marini et al., 2020; Smith et al., 2020; Roth, 2020; Protopopescu et al., 2020; Gu, 2020; Gerber, 2020). With the restriction of human contact and many retired veterans living alone, the need for moral support was/is greater. Veterans were associating the COVID-19 pandemic with the Vietnam war, causing unsettling and distorting emotions (Gerber, 2020). Emotional responses to past traumatic events have caused a decline in veterans mental health. The use of social support, including for military spouses, allows those struggling to appreciate that they are not alone and may be able to be part of the solution (Bock, 2020).

Theme 7 –Inconvenience

During the pandemic, the uncertainty of the virus became problematic. Although in the military setting, uncertainty is that for which personnel are trained, yet the quantity of inconvenient challenges can cause considerable strain. Throughout such trying times, stability and protection are priorities, and the limitation of resources creates additional difficulties in the field which in terms, causes further stress.

Simms et al. (2020) outlined the issues regarding inadequate protective equipment. COVID-19 rapidly became a significant and substantial risk. The protection of personnel to avoid ongoing contamination was a high priority. Not only were resources needed to protect the veterans, but also the patients for whom they cared. Limited access to these supplies can

lead to complications with health and mental wellbeing of all parties involved. A high level of strain is put on employees caring for patients when there is a limitation upon protective equipment. With inadequate equipment, the screening procedures to monitor contact with infected patients then becomes compromised.

In some cases, the process to test for COVID-19 left patients waiting for up to 72 hours for results; yet before they were even able to receive the test, they had been returned to duty. This left many patients symptomatic and potentially contagious for days prior to being tested or receiving their results. Two reported cases within the US defence force were diagnosed with COVID-19 while continuing duty as a result of the delay in referrals and tests. One case resulted in multiple other defence force personnel being exposed and thwarting the mission of the entire unit (Smith et al., 2020).

Smith et al. (2020) discusses military personnel who vocalised his symptoms before waiting days before being tested. In mid-March, a young military man spoke to the military sick clinic about a frontal headache which he had for roughly three days. It wasn't until a week later that he actually received a test for influenza and sars-2-cov before coming back shortly after being positive with COVID-19. The delay in testing meant he was in close contact with uninfected individuals leaving them exposed to the virus. The limitation of testing material delayed his testing potentially leading to spreading the virus to other personnel. Payne et al. (2020) explains a similar scenario individual infected with COVID-19 was on board the USS Theodore Roosevelt; COVID-19 spread throughout the whole vessel impacting a large number of personnel — a considerable inconvenience.

Throughout the pandemic, there were preventative measures enforced that had compromised the militaries agenda. With borders closed and a higher demand for protection, the armed forces were thinly stretched. This caused stress and frustration on military personnel, leaving them unaware of their deployment status. The discussion of deployment was frequent yet there was uncertainty about the particular specifications. This caused additional distress especially for those with families. Due to the uncertainty and short notice of the deployment, the veterans found it difficult to prioritise personal events — causing another inconvenience.

Theme 8 – COVID-19 Cases

There is very limited availability with regard to confirmed COVID-19 cases within the military setting. Given some information provided, there were some recorded cases in the US and Switzerland military bases (Baettig et al., 2020; Kebisek, 2020; Payne et al., 2020).

Out of the reported cases, Payne et al. (2020) shines a light on the USS Theodore Roosevelt scenario. In late March 2020, the aircraft carrier arrived at the port Guam due to numerous cases of COVID-19. At the time of the deployment of USS Theodore Roosevelt docking at Guam, there was a suspected 1,000 service men infected. The service men were reported to be young in age resulting in mild symptoms and minimal hospitalisations. Due to the confinements of the vessel, COVID-19 restrictive measures actually became a barrier to normal operations, including support for members health and wellbeing.

Between all the cases recorded and published, patients were well cared for under appropriate circumstances to the best of the military's ability. Infected patients were quarantined and provided with necessary hospitality and medical care. They were closely monitored and the patients' health was prioritised before their return to duty.

Theme 9 – Suggestions

There were limited examples of the improvements that should be made in order to assist with future pandemics. The three articles that provided suggestions on how to improve assistance in potential future epidemics all mentioned support (Jin-Yang et al., 2020; Protopopescu et al., 2020; Riegler et al., 2020). They believed in re-developing and adapting the support systems already provided by including strategies such as telehealth and tele-psychotherapy.

There was/is, however, a wide range of evidence highlighting military personnel developing mental illnesses, especially Post Traumatic Stress Disorder. The pandemic has increased the symptoms of mental illnesses putting high stress on veterans. By providing a higher level of support, personnel can receive the appropriate care. Dealing with mental health can cause issues in all departments of an individual's life, especially family relationships. Increasing the availability to family support systems for military personnel can strengthen relationships. It can also benefit the relationships veterans have with their children.

Riegler et al. (2020), discusses a tele-psychotherapy trial that was introduced during early 2020. They provided support and guidance throughout the pandemic to assist veteran parents with children aged between 3 and 9. The service guided veterans during their parenting with mental illnesses, it reduced the likelihood of children being neglected and mistreated. Providing this service gave the support veterans with children need during struggling times.

Protopopescu et al. (2020), mentioned that military personnel just want to feel like they've got the right support in five key areas (i) being heard, (ii) protected, (iii) prepared, (iv) supported and (v) receiving care. The most appropriate way to ensure the right support is to actually speak to veterans and determine how they best need assistance.

Theme 10 - Military Role effects on health and wellbeing

Throughout the COVID-19 pandemic, the military have provided a number of procedures and resources to assist in trying to control this pandemic (refer to Table 5 for more depth). According to Gu et al. (2020), the Chinese People's Liberation Army have assisted on the forefront with medicinal responsibilities. Over 4000 medical workers from all forces were appointed to aid in the temporary hospitals with the infected patients. These clinicians serviced 2856 beds and assisted 7198 patients successfully with no healthcare workers being infected.

Given a string government commitment for controlling the virus, the clinicians were provided with additional support. This included rostering to allow for adequate rest between shifts as well as a guideline to ensure continuous work was subsided after a month. Psychological support was heavily encouraged and mental health of the military workers was closely monitored. This was also extended out to military family members.

Protopopescu et al. (2020) demonstrates measures that the Canadian military articulated throughout the pandemic. They were assigned a number of roles to help control the population and care for those infected. Their roles included, but were not limited to, peacekeeping, stabilization, humanitarian crisis work, combat positions, and redeployment to various locations. Their main mission, however, was to assist the frontline workers in healthcare. The military were heavily involved in providing required resources and expertise to maintain and appropriately care for infected patients. Thus leading some military personnel to potentially develop mental illnesses which could cause long term effects to their health and wellbeing.

DISCUSSION

The pandemic has led the military to have a substantial involvement in preventative measures and enforcing temporary laws. Many countries endured strict lockdown requirements and border closures in the hope to reduce the spread of COVID-19. In light of the pandemic, governments enforced strict preventative measures to keep their communities safe and healthy. Military personnel were required to enforce these measures and assist the frontline workers.

With the multiple strenuous missions given to the military during the pandemic, the health and wellbeing of the personnel became a great concern. With reports of COVID-19 cases within the military and mental health declining, the pandemic caused stress on current serving veterans. Some retired veterans associated the current global epidemic with past memories of their time in Vietnam.

The Role of the Military during COVID-19

With the high level of infected COVID-19 patients, the military often were required to transport them to and from hospitals (Danguay des Deserts et al, 2020; Trias, 2020; Opillard, Palle & Michelis, 2020). Medical facilities only have the capacity to hold a limited number of patients and with the overwhelming amount of infected individuals, veterans assisted in the construction of makeshift facilities to accommodate higher capacities (Trias, 2020; Opillard, Palle & Michelis, 2020).

They were also required to transport necessary resources and personal protective equipment to facilities to accommodate for the high demand (Trias, 2020). Military personnel with medical qualifications assisted the frontline workers in caring for COVID-19 patients (Gu et al., 2020). With the virus being such a severe disease, there was a high level of casualties, military personnel would then assist in the disposal of deceased individuals (Trais, 2020; Vidua et al., 2020).

In some countries, the military were in control of arrivals into the country. For those individuals returning to their country or those travelling under special circumstances, it was the veteran's role to assist in their transportation and quarantine procedures (Banerji, 2020). They were issued control of organising quarantine facilities, monitoring individuals and maintaining contact tracing information was accurate and up to date (Jayasuriya, 2020).

The military also undertook community actions used to limit transmission of the virus. These tasks were, enforcing quarantine measures, social distancing guidelines, travel

restrictions, peacekeeping, stabilization, humanitarian crisis work, combat positions, and redeployment to various locations (Protopopescu, 2020). They supported the police force to maintain community order and ensure public health guidelines were upheld to prevent the pandemic spreading (Trias, 2020).

The effects COVID-19 had on Military Personnel

The mentality of military personnel evidently declined during the COVID-19 pandemic (Riegler et al. 2020; Shura et al. 2020; Myers et al. 2020). With current serving veterans assisting with frontline workers, stress levels were heightened due to the environment in which they worked with limited resources (Simms et al., 2020; Protopopescu et al., 2020).

A substantial number of retired veteran's mental health tended to decline. Many associated the current pandemic with being in Vietnam (Gerber, 2020) and previous pandemic torn era's (e.g., the Espanol influenza). Due to a high level of retired veterans being diagnosed with Post Traumatic Stress Disorder, the pandemic caused past emotions to arise leading to family issues (Riegler, 2020).

The pressure caused by the pandemic meant that veterans had to endure higher levels of stress and anxiety (Pan et al., 2020; Roth, 2020; Gu et al., 2020; Marini et al., 2020; Jin-Yang et al., 2020). Some veterans were already struggling with mental health issues such as PTSD, moral injury, anxiety and depression; the pandemic therefore increased depressive symptoms.

Deliberations

According to Protopopescu (2020), the most appropriate way to ensure support was to actually speak to veterans and determine how they best needed assistance. The literature noted that military personnel during COVID-19 wanted to be sustained in five key areas: (i) being heard, (ii) protected, (iii) prepared, (iv) supported and (v) receiving care.

The literature also revealed that the pandemic increased the symptoms of mental illnesses, putting high stress on veterans. By providing an appropriate level of support, personnel can receive the adequate care. Mental health can cause issues in all areas of an individual's life, especially family relationships. Increasing the availability to family support systems for military personnel can strengthen relationships. It can also benefit the relationships veterans have with their children.

A tele-psychotherapy trial was introduced during early 2020. These provided support and guidance throughout the pandemic to assist veterans with children aged between 3 and 9 years old. The service guided veterans with mental illnesses during their parenting, it reduced the likelihood of children being neglected and mistreated. Providing this service also assisted veterans with children need during struggling times (Riegler et al., 2020).

CONCLUSIONS AND RECOMMENDATIONS

COVID-19 has led to many countries around the globe enduring severe public health measures to reduce the spread of COVID-19. The severity of the virus has led to many casualties and several hospitals being at full capacity. COVID-19 has led to multiple lockdowns and border closures, highlighting the severity of the virus.

During the pandemic, the military played a substantial part in assisting with prevention measures; personnel around the globe provided aid in various forms. This included, but not limited to, transportation of patients, the delivery of resources, construction of makeshift hospitals, medical assistance and disposal of the deceased. The extent of the responsibilities of military personnel impacted their health and wellbeing, especially mental health.

During the pandemic, already developed mental illnesses were heightened, and the higher stressful situations caused mental strain on current serving veterans. Mental health support, with the requirement for remote accessibility, became a high priority. Given highly stressful missions, military personnel require the correct resources to support them long term with regard to their mental health.

Key Recommendations

Three key recommendations can be made based on this exploratory scoping review. It is recommended that military forces:

- i) Explore technological engagement for providing a wider range of support systems that can accommodate a greater audience in assisting their overall wellbeing. The pandemic taught many that technology has opened numerous and improved communication opportunities to allow for trained personnel to provide bio-psycho-social and spiritual care beyond the usual face-to-face encounters. It particularly allows access to individuals who may be residing/working in remote areas.

- ii) Establish mobile ‘rapid quarantine units’ (RQUs) ready to be deployed for both military and civilian personnel which enforce social distancing guidelines, and that necessary resources are supplied, as well as monitoring the health and wellbeing of all crew members to prevent contamination.
- iii) Ensure adequate numbers of appropriate trained staff for both (i) and (ii) above.

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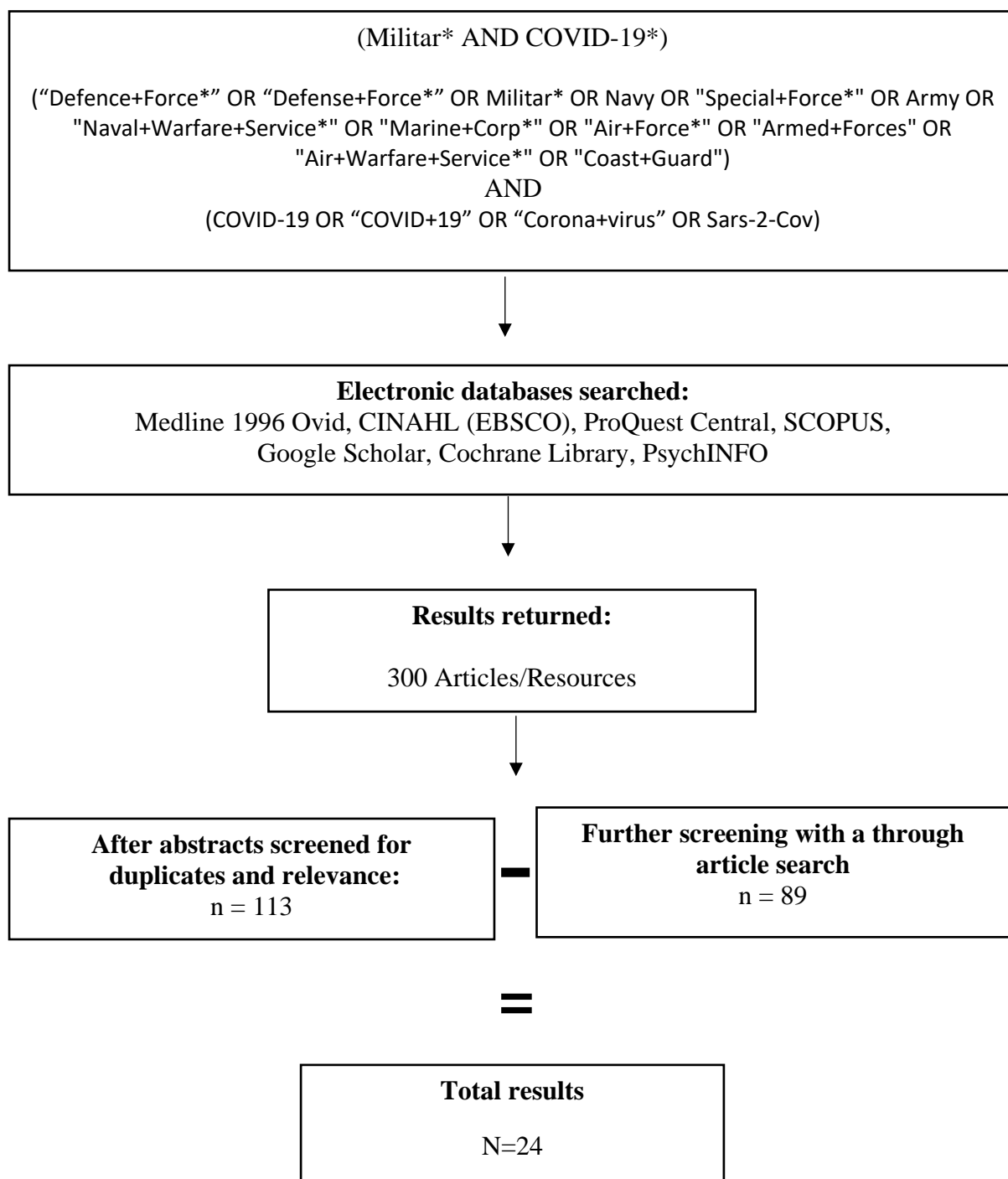
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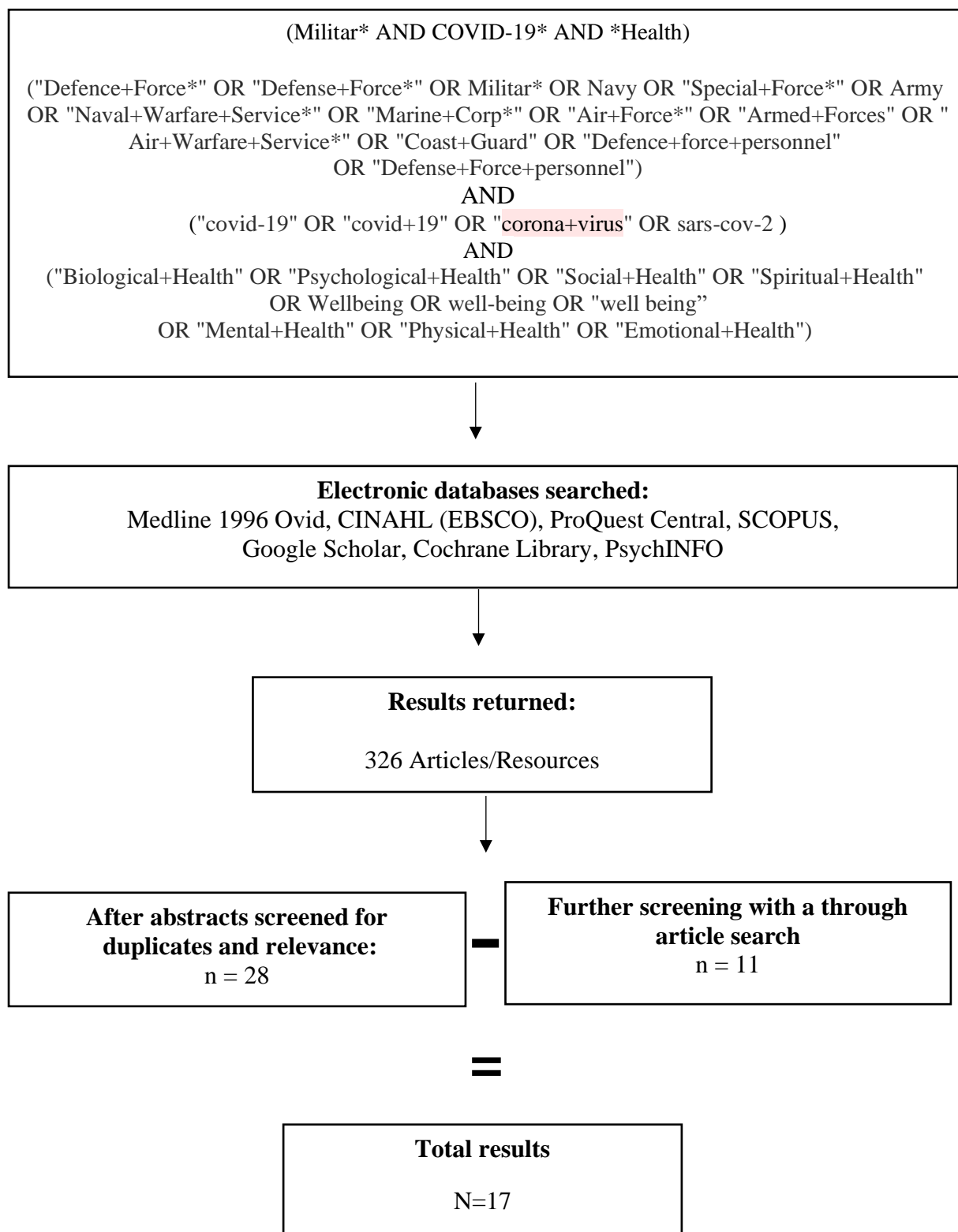
APPENDIX 1

Search Strategy: Question 1



APPENDIX 2

Search Strategy: Question 2



APPENDIX 3

Literature and Thematic Coding for Question 1

| Article No. | Author/s (Year), Title | Brief summary | Thematic coding |
|--------------------|--|--|------------------------|
| 1 | Anon (2020) COVID-19 and the US military | COVID-19 has challenged US military readiness and raised some strategic concerns. Overall, however, the military's response appears to have struck a sensible and effective balance so far, establishing procedures for containing the disease while continuing deployments and crucial operations – despite poor presidential leadership. | 1, 2 |
| 2 | Banerji, A. (2020) The armed forces medical services response to COVID-19. | The Indian Armed Forces have always responded to the Nation's call and the COVID-19 pandemic response has been no different. On instructions from the Government of India, the Armed Forces Medical Services (AFMS) pitched in right from the initial stages of the epidemic in India as part of a coordinated national response. Be it the execution of medical quarantine for Indian citizens evacuated from China and other COVID affected countries or establishing dedicated and mixed COVID hospitals for its own clientele as well as civilian patients, the AFMS worked in tandem with the national policies. The Armed Forces ensured force preservation and protection of its own troops and families by timely implementation of public health measures, even as it played its designated role in the national strategy. With vision, understanding and clarity, the AFMS continue to lend shoulder to India's response to this global public health challenge. | 1, 2, 4 |
| 3 | Borges, L. et al. (2020) Military Nursing in "Operation Return to Brazil": aeromedical evacuation in the coronavirus pandemic. | OBJECTIVE: to describe the experience of military nursing in "Operation Return to Brazil" in an aeromedical evacuation., METHOD: this is an experience report of the nursing staff in the Aeromedical Evacuation of potentially-contaminated Brazilians who were in Wuhan, China, after the outbreak of the new coronavirus., RESULTS: the report was constructed from nursing care performed in three stages: pre-flight, screening, and flight. Pre-flight care would include aircraft configuration and material prediction. In screening, the staff was concerned with being properly attired. In the health assessment of returnees, in-flight, attention was focused on Personal Protective Equipment handling to minimize the risk of contamination by prolonged contact with potentially-contaminated passengers. Final considerations: nursing was committed to planning all the actions of this mission, which was one of the longest, strenuous and unprecedented in the history of aeromedical transport in Brazil. | 3 |

| | | | |
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| 4 | <p>Costa, I et al. (2020)</p> <p>Choosing a hospital assistance ship to fight the covid-19 pandemic</p> | <p>OBJECTIVE: To apply the THOR 2 multi-criteria support system to select the Brazilian navy's most suitable hospital care vessel (NAsH) to support the fight against the covid-19 pandemic. METHODS: We used the first three stages of the Soft Systems Methodology for structuring and modeling of the problem. For the evaluation and ordering of alternatives, we used the Thor 2 multi-criteria support system, comparing four classes of NAsH in the light of their operational and hospital criteria: "Dr. Montenegro," "Soares Meirelles," "Oswaldo Cruz" and "Tenente Maximiano." The chosen ship would support the amazon hospital system, which has an increasing number of cases of covid-19. RESULTS: After the application of the methods, we analyzed three distinct scenarios of ordering the alternatives, which allowed a robust sensitivity analysis, conferring greater transparency and reliability to the decision-making process. The NAsH "Oswaldo Cruz" was selected to be used in the fight against the pandemic. CONCLUSIONS: This study brings valuable contribution to academia and society, since it represents the application of a multi-criteria decision-aid method in the state of the art to contribute to the solution of a real problem that affects millions of people in Brazil and worldwide.</p> | 1 |
| 5 | <p>Danguy, M et al. (2020).</p> <p>Conception and deployment of a 30-bed field military intensive care hospital in Eastern France during the 2020 COVID-19 pandemic</p> | <p>Following the order of the French president Emmanuel Macron on March 16, 2020, the French Military Health Service designed a 30-bed field military intensive care hospital. In an un-precedented manner, the "Élément Militaire de Réanimation du Service de Santé des Armées"(EMRSSA, Field Intensive Care Unit of the French Military Health Service) offered a full integrative intensive care system. The EMRSSA field hospital joined and supported the Émile-Muller hospital in Mulhouse, an 850-bed general public hospital.</p> | 1, 2, 3 |
| 6 | <p>Hodgetts, J et al. (2020)</p> <p>Remote training for combat medics during the COVID-19 era: lessons learnt for future crises?.</p> | <p>BACKGROUND: In response to COVID-19, the UK government ordered strict social distancing measures. The UK Armed Forces followed these to protect the force and ensure readiness to respond to various tasking requests. Clinical training has adapted to ensure geographically dispersed medical personnel are trained while social distancing is maintained. This study aimed to evaluate remote training for Combat Medical Technicians, Medical Assistants and Royal Air Force Medics (CMTs/MAs/RAFMs) during the COVID-19 pandemic and the views of trainers on how this should be delivered now and in the future., METHODS: A mixed quantitative and qualitative survey study was conducted to determine the experiences of a sample of Defence Medical Services personnel with remote training during the COVID-19 pandemic. Medical and nursing officers involved in teaching CMTs/MAs/RAFMs were eligible to participate., RESULTS: There were 52 survey respondents. 78% delivered remote training to CMTs/MAs/RAFMs, predominantly using teleconferencing and small-group webinars. 70% of respondents report CMTs/MAs/RAFMs received more training during the COVID-19 pandemic than before. 94% of respondents felt webinar-based remote training should continue after COVID-19. The perceived benefits of webinar-based training included reduced travel time, more training continuity and greater clinical development of learners.,</p> | 2 |

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| | | CONCLUSIONS: The challenge of continuing education of medical personnel while maintaining readiness for deployment and adhering to the Government's social distancing measures was perceived to have been met within our study sample. This suggests that such an approach, along with clear training objectives and teleconferencing, may enable personnel to deliver high-quality training in an innovative and secure way. | |
| 7 | Jayasuriya, D et al. (2020) Covid-19: the Sri Lankan response | Expectations were high that Sri Lanka, due to its high temperature and humidity levels, will be spared from the worst effects of the Covid-19 epidemic. The first Covid-19 infected person was a female Chinese tourist who was detected as she was planning to leave the country in March 2020. She was hospitalised and managed to recover. Since then nearly 200 infected persons have been identified and 7 deaths have occurred as at 10 April. Some 50 infected persons have recovered. Most of those infected are returnees from Italy, Indonesia and other countries or who had associated with other infected persons. Concerns about transmission within families or contact persons led to the imposition of quarantine measures and even two-to three-week long curfews in certain areas. Sri Lankans and certain nationalities such as Italians were sent to quarantine centres as they arrived in the country but Chinese nationals working in Sri Lanka who returned from China were excluded. The reason for the exclusion was apparently that they had stayed in China for two weeks without showing signs of infection. The Army's Military Intelligence Directorate has been tracing victims and those who may not have declared that they returned from overseas. The Police, Army, Navy and Air Force personnel and Public Health Inspectors have been working together. The forces have been instrumental in constructing makeshift quarantine centres and in manufacturing a robot to remotely administer drugs etc. to in-patients. | 1 |
| 8 | Kline, J et al. (2020) Sentinel Case of COVID-19 at Fort Stewart, GA in a National Guard Soldier Participating in Annual Training: A Case Report. | For healthcare providers, specifically military and federal public health personnel, prompt and accurate diagnosis and isolation of SARS-CoV-2 novel coronavirus patients provide a two-fold benefit: (1) directing appropriate treatment to the infected patient as early as possible in the progression of the disease to increase survival rates and minimize the devastating sequelae following recovery and remission of symptoms; (2) provide critical information requirements that enable commanders and public health officials to best synchronize policy, regulations, and troop movement restrictions while best allocating scarce resources in the delicate balance of risk mitigation versus mission readiness. Simple personal protective measures and robust testing and quarantine procedures, instituted and enforced aggressively by senior leaders, physicians, and healthcare professionals at all levels are an essential aspect of the battle against the COVID-19 pandemic that will determine the success or failure of the overall effort. As consideration, the authors respectfully submit this vignette of the first confirmed positive COVID-19 case presenting to the Emergency Department at Winn Army Community Hospital, Fort Stewart, Georgia. Copyright Published by Oxford University Press on behalf of the Association of Military Surgeons of the United States 2020. This work is written by US Government employees and is in the public domain in the US. | 2 |
| 9 | Mansoor, S et al. (2020) | The novel coronavirus disease (COVID-19) is a recent pandemic which has spread to over 200 countries of the world since its outbreak. As of 21st April, 2020, more than 2.3 million confirmed cases have been reported. The World Health Organization (WHO) has issued a strategic preparedness response plan for countries at risk. This is based on the knowledge of previous epidemics and experience shared by Chinese health authorities. There is special emphasis on strict 'quarantine | 1 |

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| | Establishing and Managing a Quarantine and Isolation Centre in COVID-19 Pandemic. | and isolation' of suspected/diagnosed cases. Pakistan is a developing country with a weak healthcare system. Pakistan Armed Forces have always provided services to the countrymen during natural and man-made disasters. During this pandemic the largest rehabilitation institute in the country was converted into a 130-bed dedicated isolation and quarantine facility for the COVID-19 patients. We will share our experience of establishing and managing this quarantine and isolation facility and highlight the achievements and out-of-the-box solutions applicable for low resource countries like Pakistan. | |
| 10 | Marcus, J et al. (2020). COVID-19 Monitoring and Response Among U.S. Air Force Basic Military Trainees - Texas, March-April 2020. | The coronavirus disease 2019 (COVID-19) pandemic has resulted in substantial morbidity and mortality since it was first described in December 2019 (1). Based on epidemiologic data showing spread in congregate settings (2-4), national, state, and local governments instituted significant restrictions on large gatherings to prevent transmission of disease in early March 2020. This and other nonpharmaceutical interventions (NPIs) have shown initial success in slowing the pandemic across the country (5). This report examines the first 7 weeks (March 1-April 18) of implementation of NPIs in Basic Military Training (BMT) at a U.S. Air Force base. In a population of 10,579 trainees, COVID-19 incidence was limited to five cases (47 per 100,000 persons), three of which were in persons who were contacts of the first patient. Transmission of symptomatic COVID-19 was successfully limited using strategies of quarantine, social distancing, early screening of trainees, rapid isolation of persons with suspected cases, and monitored reentry into training for trainees with positive test results after resolution of symptoms. | 2 |
| 11 | McGee, J et al. (2020). Prevent, Detect, and Treat: The Military's Flexible Approach for a Whole-of-Nation Pandemic Response. | As community transmission of COVID-19 first emerged in the United States and then quickly spread, America's military accepted an important role in responding to the growing pandemic. The Department of Defense (DOD) rapidly mobilized and deployed personnel, expeditionary medical capabilities, supplies, and equipment to hot spots across the country. How does a military with an expeditionary focus and armed for war abroad quickly pivot to support national response efforts to a public health crisis here at home? Coinciding with the DOD's established flexible response methodology, the US Army adapted a three-pronged approach to prevent, detect, and treat COVID-19 while protecting the force and safeguarding the American people. This approach is providing strategic and operational lessons for improving healthcare delivery, informing public health decisions, and allocating healthcare resources for future pandemic response and civil emergency support efforts. | 1 |
| 12 | Oh, H et al.(2020). Strict Containment Strategy and Rigid Social Distancing Successfully Contained | The world recognizes South Korea as an exemplary country that has succeeded in responding to COVID-19. Moreover, the South Korean military is in a stable situation with only a small number of COVID-19 confirmed cases because of strict containment and rigid social distancing policies. Although a successful response to COVID-19 with social distancing, quarantine, and source control in the basic training center of U.S. Air Force was reported ⁴ , this is the first report of successful intervention across the entire armed forces. The main strategy was to treat the military as a separate community, isolated from its local surroundings, so that influx and spread of cases could be controlled. Effective measures taken by the Armed Forces Medical Command and public health expertise in the military and active participation of each troop are important | 2 |

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| | COVID-19 in the Military in South Korea. | factors in the success of containment of the disease. In particular, the public health departments of the military led other departments such as personnel, operations, and logistics. Thus, the South Korean military could cope with the COVID-19 pandemic. Although there was an influx of cases linked with community clusters after reopening, it was a manageable level. Consequently, we believe that the success of response to COVID-19 in the South Korean military might be applicable to other country's military. | |
| 13 | Opillard, F et al. (2020). Discourse and Strategic Use of the Military in France and Europe in the COVID-19 Crisis. | In March 2020, the French President called to war against the COVID-19 which was followed by the launch of a military operation called Operation Resilience. This use of martial rhetoric initiated an effective mobilisation consisting in logistical assistance to the health sector. While armies are increasingly used to deal with environmental disasters, aside from their traditional role, this paper postulates that the geography of the French and international military engagement can be used to analyse both the institutional strategy of crisis management and the message governments send to their population. Military involvement differs in terms of missions given and of the amount of troops mobilised. It first questions the use of the military in the name of national resilience in the political discourse and the way it displays a symbolic message to the population, before analysing the role of armies in the crisis through the spatiality of their interventions. | 1, 3 |
| 14 | Pasquier, P et al. (2020) How do we fight COVID-19? Military medical actions in the war against the COVID-19 pandemic in France. | 'We are at war', French President Emmanuel Macron said in an address to the nation on 16 March 2020. As part of this national effort, the French Military Medical Service (FMMS) is committed to the fight against COVID-19. This original report aimed to describe and detail actions that the FMMS has carried out in the nationwide fight against the COVID-19 pandemic in France, as well as overseas. Experts in the field reported major actions conducted by the FMMS during the COVID-19 pandemic in France. In just few weeks, the FMMS developed ad hoc medical capabilities to support national health authorities. It additionally developed adaptive, collective en route care via aeromedical and naval units and deployed a military intensive care field hospital. A COVID-19 crisis cell coordinated the French Armed Forces health management. The French Military Centre for Epidemiology and Public Health provided all information needed to guide the decision-making process. Medical centres of the French Armed Forces organised the primary care for military patients, with the widespread use of telemedicine. The Paris Fire Brigade and the Marseille Navy Fire Battalion emergency departments ensured prehospital management of patients with COVID-19. The eight French military training hospitals cooperated with civilian regional health agencies. The French military medical supply chain supported all military medical treatment facilities in France as well as overseas, coping with a growing shortage of medical equipment. The French Armed Forces Biomedical Research Institute performed diagnostics, engaged in multiple research projects, updated the review of the scientific literature on COVID-19 daily and provided expert recommendations on biosafety. Finally, even students of the French military medical academy volunteered to participate in the fight against the COVID-19 pandemic. In conclusion, in an unprecedented medical crisis, the FMMS engaged multiple innovative and adaptive actions, which are still ongoing, in the fight against COVID-19. The collaboration between military and civilian healthcare systems reinforced the shared objective to achieve the goal of 'saving the greatest number'. | 1, 3 |

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| 15 | <p>Pirnay, J et al. (2020)</p> <p>Study of a SARS-CoV-2 Outbreak in a Belgian Military Education and Training Center in Maradi, Niger.</p> | <p>Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) compromises the ability of military forces to fulfill missions. At the beginning of May 2020, 22 out of 70 Belgian soldiers deployed to a military education and training center in Maradi, Niger, developed mild COVID-19 compatible symptoms. Immediately upon their return to Belgium, and two weeks later, all seventy soldiers were tested for SARS-CoV-2 RNA (RT-qPCR) and antibodies (two immunoassays). Nine soldiers had at least one positive COVID-19 diagnostic test result. Five of them exhibited COVID-19 symptoms (mainly anosmia, ageusia, and fever), while four were asymptomatic. In four soldiers, SARS-CoV-2 viral load was detected and the genomes were sequenced. Conventional and genomic epidemiological data suggest that these genomes have an African most recent common ancestor and that the Belgian military service men were infected through contact with locals. The medical military command implemented testing of all Belgian soldiers for SARS-CoV-2 viral load and antibodies, two to three days before their departure on a mission abroad or on the high seas, and for specific missions immediately upon their return in Belgium. Some military operational settings (e.g., training camps in austere environments and ships) were also equipped with mobile infectious disease (COVID-19) testing capacity</p> | 2 |
| 16 | <p>Rajbhandari, B et al. (2020)</p> <p>Air Medical Evacuation of Nepalese Citizen During Epidemic of COVID-19 from Wuhan to Nepal.</p> | <p>In December 2019, the world was disrupted by the news of a new strain of virus known as Novel Corona virus, taking lives of many in China. Wuhan, the capital of Central China's Hubei province is said to be the place where the outbreak started. The city went on a lockdown as the disease spread rapidly. After the lockdown, most countries like India and Bangladesh airlifted their citizens who were studying in Wuhan. Similarly, Nepal also has many youth studying medicine in Wuhan. Pleas for help from the students reached the government. This was a first encounter of such experience for Nepal government. With the help of Health Emergency Organizing committee, Epidemiology and Disease Control Division, Nepal Army Hospital, Nepal Police Hospital, Waste Management team, Nepal Ambulance service, Tribhuvan Airport and Royal Airlines the government of Nepal planned, organized and successfully brought back all the 175 students on 15 the February, 2019 from Wuhan, China. The aim of the present article is to share the experience, the challenges faced and recommendations for future similar cases. Keywords: evacuation; Nepal; Novel Corona virus; Wuhan.</p> | 3 |
| 17 | <p>Sammito, S et al. (2020)</p> <p>European Aeromedical Evacuation Transports with SARS-COV 2 positive Patients</p> | <p>Background As part of the humanitarian response to the COVID-19 pandemic, the German Armed Forces provided air transport for patients to Germany from overwhelmed regional hospitals in Italy and France. Thus far, 22 Italian and 2 French citizens have been flown to Germany as part of this effort. The objective of this study is to use a pre-post comparison to analyse changes in vital signs, in particular regarding the ventilation status of the patients, and to draw conclusions for future transports of COVID-19 patients in fixed-wing aircraft. Method Retrospective analysis of transport records as well as other documents (patient movement requests, doctor's referrals, flight times) for 24 COVID-19 patients requiring ventilation. Results 63% of the patients (median age: 59.1 years) had pre-existing medical conditions. They had been ventilated for a median of 10.0 days (Min: 3, Max: 28) and experienced the first symptoms of COVID-19 a median of 17.5 days (Min: 6, Max: 35) before transport. We did not observe a deterioration in vital signs or ventilation status during transport. It was, however, necessary to deepen anaesthesia and administer additional catecholamines during transport. Conclusion The</p> | 3 |

intensive care transport of ventilated COVID-19 patients requires highly qualified personnel and appropriate equipment but can be carried out if properly planned.

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| 19 | <p>Segal, D et al. (2020)</p> <p>Measures to Limit COVID-19 Outbreak Effects Among Military Personnel: Preliminary Data.</p> | <p>INTRODUCTION: The COVID-19 outbreak posed a threat to the readiness of military forces as well as their ability to fulfil missions. Seeing that military forces have been encountering similar challenges, we found it eminent to share the Israeli Defense Force (IDF) Northern Command's (NC) preliminary experience., MATERIALS AND METHODS: We retrospectively summarized the actions that were taken by our team, focusing on 18 battalions at the Israeli NC. These actions included promoting a series of organizational changes in terms of social distancing and medical regulations as well as working to strengthen medical leadership through designated video meetings with medical commanders across our organization. Meetings included relevant clinical education, updates, and leadership building. These actions and others were aimed to increase our influence on the decision-making processes. While we conducted real-time reverse transcriptase polymerase chain reaction SARS-CoV-2 laboratory tests for soldiers who were suspected to have COVID-19 (those presenting with compatible signs and symptoms after having been exposed to a confirmed COVID-19 patient), we were not able to screen healthy populations, nor did we have serum antibody serologic tests available during the study period. We reviewed the COVID-19 outbreak national data, obtained from Ministry of Health publishings and the IDF databases. Data were included from February 26th, 2020 (day 0, first COVID-19 patient in Israel) to April 19th, 2020 (day 53, about 1 month after most of the COVID-19 regulation were issued in the NC)., RESULTS: The mean age of the battalion soldiers was 21.29 +/- 4.06 (range 18-50), 81.34% male. Most restrictions were issued on day 18. On day 53, 98.85% of the personnel in the battalions were kept active and asymptomatic in their units., CONCLUSIONS: Despite the limited availability of laboratory testing for COVID-19 our actions enabled us to lead a strict risk-management policy while maintaining most of the available workforce.</p> | 2 |
| 20 | <p>Shirzad, H et al. (2020)The Role of Military and Police Forces in Crisis Management due to the COVID-19 Outbreak in Iran and the World TT –</p> <p>نقش نیروهای نظامی و انتظامی در مدیریت بحران ناشی</p> | <p>Aims: Following the first recorded case of COVID-19 in Wuhan, China, in late December 2019, the disease, via human to human transmission, quickly spread around the world and raised global concern, as it was declared a pandemic by WHO. Adoption and control of preventive measures in many countries has not been successful and led to the development and spread of the crisis. In addition to the ministry of health and medical personnel, military and police forces have also taken action to deal with counteracting and handling the crisis caused by the prevalence of COVID-19 in Iran and some other countries. They aided people and the ministry of health in actions such as clearing and disinfecting passages, securing medical centres, protecting sensitive centres and national vaccine or drug depots, enforcing quarantine or travel restrictions, maintaining public order, controlling gatherings, using thermal cameras, and protecting the community in cyberspace. Conclusion: In the crisis caused by the outbreak of COVID-19, the health and lives of military and law enforcement personnel are at risk as well as home health advocates. So people need to have more empathy and interaction with these treatment</p> | |

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| از شیوع بیماری کووید-19 در ایران و | personnel and staff to manage the crisis. Now that the most realistic way of dealing with the crisis and limiting the spread of COVID-19 is to stay home and maintain voluntary quarantine, people need to be extremely cooperative. | |
| 21 Stucky, C et al. (2020). COVID-19: Initial Perioperative and Perianesthesia Nursing Response in a Military Medical Center. | Nurses have historically led efforts to improve the health of populations while simultaneously and unselfishly providing care during pivotal moments of national need. The COVID-19 pandemic has placed an unprecedented strain on the US health care system, including severe shortages of hospital beds, supplies, equipment, pharmaceuticals, and healthy frontline clinicians. Perioperative and perianesthesia leaders and clinicians have unique opportunities to provide patient care during the COVID-19 crisis. In this manuscript, we describe the initial changing roles and contributions of perioperative and perianesthesia registered nurses during the COVID-19 pandemic and share recent experiences from a military medical center. Perioperative and perianesthesia nurses are vital to the overall nursing viability of the health care system, as they possess the requisite knowledge and skills to provide expert clinical care in many hospital settings and meet the demands of a global pandemic. | |
| 22 Trias, A et al. (2020). Global Health Security – Military Response to COVID-19: Advantages and Constraints | Governments around the world are deploying their military forces to respond to COVID-19. Militaries can be helpful in responding to emergencies and disasters because of their organised and unique capabilities. But how can the military be useful in the fight against the coronavirus? | 1, 3, 4 |
| 23 Vidua, R et al. (2020). Dead body management amidst global pandemic of Covid-19. | Covid-19 has reached almost all the nations in the world. More and more people are dying from it and in some countries, even the army has been called upon to help dispose of the dead as there is a shortage of coffins, and undertakers are overwhelmed. Therefore, it is essential to have measures in place to contain the spread of infection while handling dead bodies. In view of this, different guidelines and protocols have been proposed bearing in mind the limited information we have about the virus. This review article sets them out for better reference. | 1 |
| 24 Watts, G et al. (2020). What the NHS is learning from the British army in the covid-19 crisis. | Governments around the world have been seeking the help of the military in tackling the spread of covid-19. Some of these interventions have been substantial: as early as the beginning of March, the Chinese state news agency Xinhua was reporting that 10 000 military medics were already “working at the front line” and that 3000 beds had been set up by 63 military hospitals for treating infected patients. ¹ The UK Ministry of Defence is no exception to this involvement in what are normally civilian affairs. From building new hospitals to delivering bulk oxygen supplies and taking the strain off employees at hard pressed NHS supply depots, soldiers have been in evidence. | 1 |

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APPENDIX 4
Literature and Thematic Coding for Question 2

| Article no. | Author/s (Year), Title | Brief summary | Thematic coding |
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| 1 | Baettig et al (2020) Case series of coronavirus (SARS-CoV-2) in a military recruit school: clinical, sanitary and logistical implications | INTRODUCTION: A new coronavirus, called Severe Acute Respiratory Syndrome-CoronaVirus-2 (SARS-CoV-2), has emerged from China in late 2019 and has now caused a worldwide pandemic. The impact of COVID-19 has not been described so far in a military setting. We therefore report a case series of infected patients in a recruit school in Switzerland and the herein associated challenges., METHODS: Retrospective review of COVID-19 cases among Swiss Armed Forces recruits in the early weeks of SARS-CoV-2 pandemic in the canton of Ticino, the southernmost canton of Switzerland. Positive cases were defined with two positive PCR testing for SARS-CoV-2 from nasopharyngeal swabs. Serological testing was performed with a commercially available kit according to manufacturers' instructions., RESULTS: The first case was likely contaminated while skiing during weekend permission. He became symptomatic 4 days later, tested positive for SARS-CoV-2 and was put into isolation. He showed complete symptom resolution after 48 hours. Quarantine was ordered for all recruits with close contact in the past 2 days, a total of 55 persons out of 140 in the company. Seven out of nine recruits in one particular quarantine room became mildly symptomatic. SARS-CoV-2 PCR was positive in one of them. Seven days after initial diagnosis, the index patient and the other one from the quarantine retested positive for SARS-CoV-2, although they had been completely asymptomatic for over 96 hours. Serological testing revealed positive for both patients. All others showed negative IgM and IgG., CONCLUSIONS: Young healthy recruits often showed a mild course of COVID-19 with rapid symptom decline but were persistent SARS-CoV-2 carriers. This illustrates how asymptomatic patients may be responsible for covert viral transmission. An early and prolonged establishment of isolation and quarantine for patients and close contacts is essential to slow down the spread of SARS-CoV-2, especially in the confined space of a military environment. | 8 |
| 2 | Bock (2020) Passing the word | The Marines of the 31st MEU returned to a new world this spring when amphibious assault ship USS America (LHA-6) pulled into port in Okinawa after their participation in Exercise Cobra Gold 20 and naval integration training in Guam as well as the South and East China Seas. In response to COVID-19, Caregivers on the Homefront has also sent out care packages to caregivers, including masks, hand sanitizer and self-care items and is preparing to offer mental health counseling-in person and virtually-starting by June L "Like so many military spouses, I'm proud to support and provide care to my husband, a 23-year Army veteran who served his country with distinction. The program offers military spouses accessible, free financial education and resources, including Money Ready, a guide that tackles a variety of financial topics; MilLife Milestones, a resource to empower spouses to make smart money moves during life's big moments; videos featuring financial tips and tools from fellow military spouses; a blog with real conversations covering the latest money related topics and issues; resources like military support links, financial calculators, quizzes and more; and a social media community of support. | 5, 7 |

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| 3 | Gerber (2020) The things they carry: Veterans and the COVID-19 | Awareness that Veterans may be experiencing the current COVID-19 crisis through the lens of prior wartime experience, may be re-traumatized and cut off from their social support networks, should prompt all clinicians to inquire about prior military service. This is especially important for community-based practitioners who may not be aware of their patients' military histories. Asking, "Have you ever served in the US military?" enables identification of Veterans and validation of their experience. It can also facilitate connection to VA which has well-established, robust telehealth capabilities, including evidence-based telemental health treatment, and continues to enrol new patients during the pandemic | 5, 6 |
| 4 | Gu et al (2020). Psychological safeguards for Chinese People's Liberation Army fighting COVID | Currently, COVID-19 has been effectively controlled in China. The Chinese People's Liberation Army (PLA) has played an important role in combating COVID-19. Over 4000 medical workers from the PLA Ground Force, Navy, Air Force, Rocket Force, Strategic Support Force and Joint Logistic Support Force, as well as several medical institutions of the People's Armed Police were selected in three batches to support Wuhan's fight against COVID-19. | 5, 6, 10 |
| 5 | Jin-Yang et al (2020) Investigation of sleep quality and psychological status of a naval force stationed in Hubei, China during coronavirus disease 2019 epidemic | Objective To understand the sleep quality and psychological status of officers and soldiers in naval force stationed in Hubei, China during the coronavirus disease 2019 (COVID-19) epidemic, and to explore the influencing factors, so as to maintain the physical and mental health of officers and soldiers during the epidemic. Methods Pittsburgh sleep quality index (PSQI) scale, patient health questionnaire-9 (PHQ-9), generalized anxiety disorder-7 (GAD-7) and impact of event scale-revised (IES-R) were used to evaluate the sleep and psychological status of officers and soldiers in a naval force stationed in Hubei province. Results A total of 238 questionnaires were sent out, and 232 valid questionnaires were collected, with an effective rate of 97.5%. The median score of PSQI scale was 2.00 (1.00, 5.00), and poor and very poor sleep qualities accounted for 5.6% (13/232) and 0.9% (2/232), respectively. The median score of PHQ-9 was 0.00 (0.00, 2.00), and mild, moderate and severe depression accounted for 12.1% (28/232), 0.9% (2/232) and 0.4% (1/232), respectively. The median score of GAD-7 was 0.00 (0.00, 0.00), and mild anxiety was found in 7.8% (18/232) participants. The median score of IES-R was 1.00 (0.00, 5.00), and mild and moderate psychological stress accounted for 12.5% (29/232) and 1.3% (3/232), respectively. Conclusion The sleep quality and psychological status of the officers and soldiers from the naval force stationed in Hubei are generally good during the COVID-19 epidemic. A small proportion of them have mild psychosomatic disorders, such as poor sleep quality, depression, anxiety and psychological stress reaction. Psychological counseling and humanistic care should be given to better maintain the physical and mental health of naval forces and ensure their combat capability. | 5, 9 |
| 6 | Kebisek et al (2020). Special report: Prevalence of selected underlying health | The novel coronavirus (severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2) that causes coronavirus disease 2019 (COVID-19) is exhibiting widespread community transmission throughout most of the world. Previous reports have evaluated the risk of serious illness in civilians diagnosed with COVID-19; however, similar reports have not been compiled for the Army active component (AC) population. COVID-19 has been a reportable condition for the Department of Defense since 5 February 2020, and, as of the morning of 6 April, a total of 873 cases were reported to the Disease Reporting System internet from Army installations. Of | 8 |

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| | conditions among active component Army service members with coronavirus disease 2019, 11 February-6 April 2020. | these cases, a total of 219 (25.1%) were identified as Army AC service members. The majority of these cases did not require hospitalization (n=207; 94.5%). The most common comorbidities present in nonhospitalized cases included other chronic illnesses (43.5%), neurologic disorders (24.6%), and obesity (21.7%). Overall, 12 cases (5.5%) required hospitalization. Hospitalized cases had a history of obesity (58.3%), neurologic disorder (50.0%), other chronic illnesses (41.7%), and hypertension (25.0%). No comorbidities were present among 27.1% (n=56) of nonhospitalized cases and 25.0% (n=3) of hospitalized cases. | |
| 7 | Marini et al (2020) Aging veterans' mental health and well-being in the context of COVID-19: The importance of social ties during physical distancing. | Prior wartime trauma likely acts as a double-edged sword that promotes both aging veterans' vulnerability and resilience in the context of the current COVID-19 pandemic. During this stressful time, aging veterans may benefit from having an array of socially supportive network ties. We therefore suggest that clinicians working with veterans encourage veterans to (a) create or sustain positive social connections while maintaining physical distance and (b) call upon coping strategies that helped them manage past difficulties. (PsycInfo Database Record (c) 2020 APA, all rights reserved) Impact Statement Clinical Impact Statement-The impact of the COVID-19 pandemic will be varied among aging veterans. Prior trauma experiences may be linked with increased current difficulty, and may promote resilience for some aging veterans. Veterans who struggle with isolation may benefit from strategies that promote social connection and encouragement to use coping skills that have been helpful in the past. | 5, 6 |
| 8 | Myers et al (2020) Flattening the Curve by Getting Ahead of It: How the VA Healthcare System Is Leveraging Telehealth to Provide Continued Access to Care for Rural Veterans | Many of the lessons learned from COVID-19 can be used by VHA in preparation for potential future pandemics or a similar national emergency restricting or impacting travel. Additionally, the VHA can serve as an instructive model for the rest of the nation and other health care systems regarding telehealth implementation. Finally, the rapid expansion of telehealth in response to COVID-19 within VHA and subsequent refinements to the system can be used to more immediately improve the health and well-being of veterans facing ongoing access to care barriers, such as those residing in rural areas. | 5, 6 |

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| 9 | Nir et al (2020). Case report: Ethical considerations regarding involuntary hospitalization during the COVID-19 outbreak | This case study describes the involuntary psychiatric hospitalization of a young male soldier following an acute manic-psychotic episode. The episode occurred while the soldier was in quarantine as protection from exposure to SARS-CoV-2. The soldier was discharged from hospital after two weeks with a diagnosis of transient psychotic episode. He was found negative for SARS-Cov-2 infection. To the best of the authors' knowledge, no previous literature exists on the ethical issues related to involuntary psychiatric hospitalizations during an epidemic. The current case highlights the need to reconsider the approach to psychiatric hospitalization in times of crisis such as the COVID-19 epidemic | 5 |
| 10 | Pan et al (2020). The Prevalence of Mental Health Problems and Associated Risk Factors among Military Health Workers of COVID-19 Specialized Hospitals in Wuhan, China: A Cross-Sectional Survey | Background China has been severely affected by COVID-19 (Coronavirus Disease 2019) since December 2019. In the combat against COVID-19, military health workers in China suffered from many pressures. This study aimed to investigate the current psychological status and risk factors of the military health workers. Methods Using a web-based cross-sectional survey, we collected data from 194 military health workers from three inpatient wards in two COVID-19 specialized hospitals. The survey questions consisted of demographic information, Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-15 (PHQ-15). Hierarchical regression analysis was used to explore potential risk factors for mental health problem. Results The overall prevalence of depressive symptoms, generalized anxiety and somatic symptoms were 37.6%, 32.5% and 50%, respectively. Severe depression, generalized anxiety and somatic symptoms was 5.2%, 3.6% and 15.5%. In 22.7% of cases, comorbidities existed between depression, generalized anxiety and somatization. Junior-grade professional title was associated with depression, older age was associated with generalized anxiety and somatization, and less sleep duration and poor sleep quality were associated with all three symptoms. Conclusion The prevalence of depression, generalized anxiety and somatic symptoms were high in military health workers of COVID-19 specialized hospitals during the COVID-19 outbreak. Junior-grade professional title, older age, less sleep duration, and poor sleep quality have significant effects on the mental health of military health workers. Continuous surveillance and monitoring of the psychological consequences of the COVID-19 outbreak should become routine to promote the mental health of military health workers. | 5 |
| 11 | Payne et al (2020) SARS-CoV-2 Infections and Serologic Responses from a | Compared with the volume of data on coronavirus disease 2019 (COVID-19) outbreaks among older adults, relatively few data are available concerning COVID-19 in younger, healthy persons in the United States (1,2). In late March 2020, the aircraft carrier USS Theodore Roosevelt arrived at port in Guam after numerous U.S. service members onboard developed COVID-19. In April, the U.S. Navy and CDC investigated this outbreak, and the demographic, epidemiologic, and laboratory findings among a convenience sample of 382 service members serving aboard the aircraft carrier are reported in this study. The outbreak was characterized by widespread transmission with relatively mild symptoms and asymptomatic infection among this sample of mostly young, healthy adults with close, congregate exposures. Service members who reported taking preventive measures had a lower infection rate than did those | 7, 8 |

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| Sample of U.S. Navy Service Members - USS Theodore Roosevelt, April 2020. | who did not report taking these measures (e.g., wearing a face covering, 55.8% versus 80.8%; avoiding common areas, 53.8% versus 67.5%; and observing social distancing, 54.7% versus 70.0%, respectively). The presence of neutralizing antibodies, which represent antibodies that inhibit SARS-CoV-2, among the majority (59.2%) of those with antibody responses is a promising indicator of at least short-term immunity. This report improves the understanding of COVID-19 in the U.S. military and among young adults in congregate settings and reinforces the importance of preventive measures to lower risk for infection in similar environments. | |
| 12 Protopopescu et al (2020) Moral injury in Canadian military members and Veterans: Implications for military and healthcare sector response during the COVID-19 pandemic | Introduction: Amidst the 2020 COVID-19 pandemic, frontline healthcare workers may be faced with a host of challenging decisions and decisional consequences made within the context of potential shortages in personal protective equipment (PPE), an unknown virus, and treatment uncertainty, which may briefly decree one treatment effective and later to be of harm. Such decisions may require healthcare workers to violate their own long-standing ethical beliefs and place healthcare workers at risk of feeling betrayed by institutions or individuals they expect to “have their back”. Together, these circumstances may place healthcare workers at risk for the development of moral injury (MI), the psychological distress associated with the perceived betrayals of one’s moral or ethical values or perceived transgressions (i.e., acts of commission or omission by oneself or others). MI has been the subject of increasing research interest, particularly among military members and Veterans. Despite growing interest in MI, the clinical correlates of MI remain poorly understood. The objective of the current study was to investigate the relations among MI, symptoms of posttraumatic stress disorder (PTSD), depression, anxiety, stress, and difficulties with emotion regulation (ER) in a sample of Canadian military members and Veterans. Method: The Moral Injury Events Scale was administered to Canadian military personnel and Veterans who were receiving treatment for trauma-related disorders. Clinical- grade assessments of symptoms of PTSD, depression, anxiety, stress, and difficulties with ER also were administered. Correlational analyses were used to assess the relation of moral injury to these clinical markers of illness. Results: Increased levels of MI were associated with heightened avoidance and with alterations in the mood and cognition symptom cluster of PTSD. The relation between MI and difficulties with ER trended towards significance. Discussion: As well as confirming the association between severity of MI and elevated levels of Cluster C (avoidance) and Cluster D (negative alterations in mood and cognition) symptoms of PTSD, this preliminary study also suggests the need for further study of the association between difficulties with emotion regulation and the development of MI. Relevant methods of prevention of MI across the various military and healthcare sectors involved in the response to the COVID-19 pandemic are discussed. | 5, 6, 8, 9 |
| 13 Riegler et al (2020). Pilot Trial of a Tele-psychotherapy Parenting Skills Intervention for Veteran Families: | Changes in daily life created by the novel coronavirus (COVID-19) pandemic have resulted in a largely unprecedented situation for millions of families worldwide. Families are under considerable stress, and parents may experience greater psychological distress and disruptions in the parent-child relationship. Some parents may be particularly vulnerable to recent stressors, including those with pre-existing psychological disorders and family dysfunction. In the United States, military veterans are one such at-risk population. Recent challenges may exacerbate pre-existing conditions and heighten parenting stress, thereby negatively impacting child and family functioning. In this article, we share our experiences developing and piloting a tele-psychotherapy parenting skills program for military veterans. The intervention, Online Parenting Pro-Tips (OPPT), combined web-based educational modules addressing | 5, 9 |

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| | Implications for Managing Parenting Stress During COVID-19. | child development and positive parenting with live coaching (via videoconferencing link) of parenting skills. Forty-one veterans with a child between the ages of 3 and 9 years enrolled in this trial and 22 completed the 6-session intervention. Veterans who completed the intervention experienced significant reductions in depression, parenting stress, and family dysfunction, with medium to large effect sizes (Cohen's <i>d</i> ranged from .53 to .98). Veterans also reported significant improvements in their child's behaviors. These findings have important implications pertaining to the feasibility and effectiveness of tele-psychotherapy interventions to support at-risk families and promote positive parent-child interactions and family functioning during the COVID-19 crisis and beyond. At a practical level, OPPT and similar tele-psychotherapy interventions for families could be modified to be delivered via smartphone to increase accessibility and cost-effectiveness for families worldwide. | |
| 14 | Roth (2020) Practice implications and clinical observations: Virtual care for a military/Veteran population during the COVID-19 pandemic | 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 | 5, 6 |
| 15 | Shura et al (2020). Telehealth in Response to the COVID-19 Pandemic in Rural Veteran and Military Beneficiaries. | Telehealth interventions have rapidly become alternate but effective forms of providing ongoing care safely during COVID-19. Two-way communication will further improve the usefulness of telecommunication technology in this swiftly changing environment (eg, infectious disease epidemiology), supplementing medical and psychological services. We stand to gain much from military and VA health systems beyond clinical innovations by promoting an environment of open knowledge exchange inviting information from rural beneficiaries. Furthermore, benefits of a robust telehealth infrastructure may outlive the pandemic, with residual gains for rural patients. | 5, 6 |
| 16 | Simms et al (2020) The impact of having inadequate | BACKGROUND: Concerns are being raised about the impact of inadequate safety equipment on the mental health of healthcare workers during the COVID-19 medical response., AIMS: To assess the impact of inadequate safety equipment on the mental health of service personnel deployed on operations in order to better understand the impact on those working under the similarly demanding conditions of the COVID-19 medical response., METHODS: Self-report surveys were conducted in four operational environments with 3435 personnel providing data. Surveys recorded data on socio-demographic, military and operational characteristics, mental health measures and specific occupational stressors. Analysis through logistic regression explored the association between inadequate | 5, 7 |

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| safety equipment on mental health. | <p>equipment and all other factors., RESULTS: A total of 3401 personnel provided data on their perceptions of the adequacy of their equipment, of which 532 (15%) stated that they had a lot of concerns that they did not have the right equipment in working order. Analysis found significantly greater odds of reporting symptoms of common mental health disorders (CMD), 2.49 (2.03-3.06), post-traumatic stress disorder (PTSD), 2.99 (2.11-4.24), poorer global health 2.09 (1.62-2.70) and emotional problems 1.69 (1.38-2.06) when individuals reported working with inadequate equipment. Analyses remained significant when adjusted for confounding factors such as rank, sex and operational environment., CONCLUSIONS: An individual's perception of having inadequate equipment is significantly associated with symptoms of CMD, probable PTSD, poorer global health and increased reporting of emotional problems. This in turn may impact on their ability to safely carry out their duties and may have longer-term mental health consequences.</p> | |
| <p>17 Smith et al (2020). Case Report: COVID-19 Patient with Chief Complaint of Anosmia and Ageusia; a Unique Perspective on Atypical Symptomatology and Management in the Military</p> | <p>A novel corona virus, severe acute respiratory syndrome coronavirus-2, found in Wuhan, China in December 2019 has since spread to multiple continents and has been implicated in thousands of deaths. This pandemic—causing virus has been initially described (corona virus disease 2019 [COVID-19]) with the presentation of fever, cough, and shortness of breath. The majority of studies published have been conducted on inpatient cases and a shortage of tests has encouraged screening only of patients with classic presentation. A positive COVID-19 case of a healthy military male, with the chief complaint of anosmia and ageusia, instigated local re-evaluation of the screening protocol for possible COVID-19 patients. Multiple studies in Europe have implicated anosmia and ageusia as symptoms associated with COVID-19, and subsequently, anosmia and ageusia have been added to Centers for Disease Control and Prevention screening guidelines as well. There should be a higher index of suspicion when evaluating a patient with high-risk activities, travel, and atypical symptoms. More studies need to be conducted with a healthy outpatient population to further understand this disease and decrease its impact.</p> | 6, 7 |

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