

Operational Stress Injury: The impact on family mental health and well-being

A report to Veteran Affairs Canada

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March 2015

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Abstract

Purpose: the purpose of this research was to identify and describe the impacts that operational stress injuries (OSIs) have on family mental health and well-being.

Methods: a two-phased approach to this research question was used. The first was a rigorous series of scoping reviews drawing on a wide range of 21 social and health sciences databases and search engines. A broad interpretation of terms relating to mental health and well-being was employed in the scoping reviews to identify potential Canadian and international sources focusing on the family as a whole, spouses/caregivers and children and youth. The second phase was an environmental scan of Canadian and international web-based, publicly accessible program information for military and Veterans' families related to OSI issues.

Results: For the scoping reviews, 480 articles were screened, with 48 included for analytic data extraction related to general family impacts, 144 for spouses/caregivers, and 64 for children and youth. The majority of the sources was from the United States, and published since 2010. The scholarship on spousal issues was the most mature, with the child and youth area the least developed. Within the environmental scan process, 250 distinct web pages were accessed and 28 journal articles reviewed. In total, 66 programs or services met the inclusion criteria for analysis including 19 from Canada, 24 from the United States, 15 from the United Kingdom, 8 from Australia and none from New Zealand. Most of the programs or services that address OSIs, or more commonly identified in international sources as PTSD or combat stress, are for active military members or Veterans. Programs and services that support partners, children and youth, tended to address the daily stressors affecting all military family lives such as deployment and relocation.

Conclusion: The OSI most addressed is PTSD. Building on historic research that postulated a unidirectional, negative relationship between the OSI and impacts on family well-being and mental health, a more complex interplay of factors across Veterans, partners, and child is emerging. This more nuanced understanding of the potentially bidirectional relationship between OSI and family mental health and well-being demands that OSIs be understood within a family context; research is urgently needed to determine how OSIs impact and are impacted by the family context. Moreover, just as the assessment and intervention must move beyond the individual diagnosed with the OSI to include the family context, the broader community must also be targeted to develop its capacity to perceive and address the impacts of OSI on different family members. To achieve this, a broader array of methodologies and perspectives inclusive of contemporary definitions of the family must be employed in research. Programming must be developed that integrates the strong, developing, and emerging evidence using innovative mechanisms such that program effectiveness and accessibility are priorities.

Chapter 1: Introduction

The mental health and well-being of Veterans and their families are challenged by the operational requirements, contexts, and consequences of contemporary military service. Relocation and deployment-related separations during active service have long been recognized as significant operational imperatives requiring accommodations within the family. For contemporary Veteran families, these challenges are compounded by the impacts of recent shifts in the military context, such as the shift from peacekeeping to active combat ongoing since 1990.

Institutional imperatives of the military have extended to include deployments in war-torn areas of the globe. Members of the Canadian Forces (CAF) and other militaries are now more engaged than in the past in combat missions, involving tours of duty in locations such as Rwanda, Bosnia, and, more recently, Afghanistan. This shift from peacekeeping to active combat is associated with an increase in the prevalence of operational stress injuries (OSIs), including posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), and others, further complicating the capacity of Veterans and their family members to develop and maintain good mental health and well-being,

The consequences of PTSD and other OSIs for the Veteran and his/her family are documented in the research conducted over the past 25 years. While some studies originate in the United Kingdom, Australia, Croatia, Israel, and, to a lesser extent Canada, most of the research is American, beginning with primary and secondary analysis of data pertaining to the Vietnam War and extending to the Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) conflicts, and missions in Afghanistan. This research largely focuses on the unidirectional impact of OSIs on Veterans and their families exposing intrapersonal issues affecting psychological well-being. Correspondingly, the existing research also reveals a chain reaction for spouses and families, bringing into view significant interpersonal outcomes related to the diagnosis of an OSI. Increased conflict, decreased communication and cohesion as well as issues with adjustment and relationship satisfaction are commonly discussed in the literature. Increased mental health problems in partners have also been documented, including secondary trauma. In addition, some partners have to cope with physical and psychological violence perpetrated by the Veteran diagnosed with PTSD. Consequences extend to the children. Children of Veterans diagnosed with PTSD show signs of behavioural problems including both internalizing (e.g., withdrawal and depression) and externalizing (e.g., acting out) responses.

Veterans and their families are as varied and complex as their civilian counterparts. The heterogeneity of Veteran family form and function is adding other pressures that may impact mental health and well-being. Developmental and life course transitions such as caring for aging family members, managing dual-work households, single parenting, and supporting adult or vulnerable family members are family tasks complicated by the requirements and/or consequences of military service. Moreover, an increasing number of military members, Veterans of combat missions, and their families are living off-base. Living within civilian communities may impact access to resources, including peer support that, historically, contributed to family and community cohesion.

Current research supports the claim that the consequences of military service on Veterans and their families, whether those consequences emerge in response to balancing military service with the needs of contemporary families, customary life course transitions, and/or from a diagnosis of an acute response to combat are deeply experienced, pervasive, and potentially detrimental. Questions emerge, however, about the linkages between OSIs and family mental health and well-being. The factors faced by children and spouses of combat Veterans and Veterans during and after their transition to civilian life, and whether or not these factors impact their mental health and well-being, are the focus of this scoping review.

Method

This project involved two phases. A scoping review of selected studies focusing on the impact of OSIs on spouses, children, and families overall constituted the first phase of the review. The second phase involved an environmental scan of programs and services for family members of Veterans diagnosed with an OSI. A description of both phases follows.

Phase 1: Scoping Reviews

The methodological framework for conducting scoping studies developed by Levac, Colquhoun, & O'Brien (2010) guided the implementation of this review. This framework is grounded in the model developed by Arksey and O'Malley (2005) and involves the implementation of a step-by-step process. A description of the process, how it was implemented within this project, and strategic outcomes follows:

1) Identifying the research question

Defining the scope and focus of the questions guiding the review is a fundamental first step in the process of conducting a scoping review. Levac, Colquhoun, and O'Brien (2010) note that the question must embody a balance between breadth and specificity and should articulate the purpose of the review. In this scoping review process, project team members clarified the focus of the research question through internal discussion and consultation with Veteran's Affairs Canada (VAC) colleagues overseeing the review.

2) Identifying relevant studies

Levac, Colquhoun, and O'Brien (2010) offer guidelines for the identification of studies to be considered for inclusion in scoping reviews. The challenge at this stage is achieving balance between identifying too many articles and too few. A comprehensive sweep of potential sources is required in order to ensure that all potentially relevant articles are considered. On the other hand, identifying a large number may mean that the reviewers lose focus on the objectives guiding the review. Including too many or too few articles is equally problematic.

The search and retrieval process employed in this review, including the identification of relevant databases, was developed in consultation with librarians at Queens University and Mount Saint Vincent University. Canadian and international research was electronically searched in January/February 2015 using the following databases: PsycINFO, SocIndex, Gender Studies Database, Academic Search Premier, Research Library, CBCA Complete, PubMed, Business Source Premier, ERIC, Education Research Complete, Web of Science,

America: History and Life, Cochrane Database of Systematic Reviews, Google Scholar, Medline, Embase, CINAHL, and three library discovery platforms, Primo, Worldcat (MSVU), and Summon (Queen's). Additional studies were identified by hand searching reference lists of eligible literature. Retrievals were limited to peer-reviewed articles published in the English language between 1990 and the present day. The rationale for this chosen timeframe reflects a change in military family life due to a shift in the nature of conflicts (e.g., military tempo, role, etc.) during the early 1990s. Database searches were conducted by combining key descriptor terms relating to the link between a Veteran's OSI and family mental health and well-being. The full list of search terms is attached as Appendix A. Key search terms were combined using Boolean operators to generate multiple searches. A sample search combination follows:

- “military veterans”, combined with
- “combat experience”, combined with
- “posttraumatic stress disorder”, combined with
- “family”, combined with
- “partner abuse” OR “intimate partner violence” OR “domestic violence” OR “emotional abuse” OR “family conflict” OR “relationship quality” OR “family relations” OR “child discipline” OR “childrearing practices” OR “marital relations” OR “parent child relations” OR “parental role” OR “sibling relations” OR “financial strain” OR “caregiver burden” OR “marital separation” OR “marital status” OR “marital satisfaction” OR “marital conflict” OR “marriage counseling” OR “interpersonal relationships” OR “adultification” OR “child abuse” OR “battered child syndrome” OR “parentification” OR “posttraumatic growth” OR “resilience” OR “risk*” OR “secondary trauma*” OR “trauma transmission” OR “vicarious trauma” OR “well-being” OR “mental health” OR “mother child communication” OR “father child communication” OR “mother child relations” OR “father child relations” OR “child welfare” OR “child psychopathology” OR “transgenerational patterns” OR “child neglect”

Search results were exported to RefWorks, a citation management software program, to support the assessment of relevance to the questions focusing this review. Reference lists compiled by each university were merged and de-duplicated within a single RefWorks database; this yielded an initial total of 480 articles. Articles were then sorted into the following six categories within RefWorks: Canadian, caregivers, child/youth, family, programs, spouse/partner. Categories were divided among research team members for review of the literature included. Of the initial 506 articles, 213 were deemed relevant to address the research questions. Additional articles were added to some categories through hand searches to produce a final total of 256 articles applicable to this review. This includes a categorical organization of relevant articles as follows: 64 child/youth, 144 spouse/partner, and 48 family articles. A flowchart illustrating this process can be found in Appendix B.

3) Study selection

This stage in the review process is iterative involving collaboration among researchers as decisions are made about inclusion and exclusion criteria (Levac, Colquhoun, & O'Brien, 2010). In this review, selection criteria were developed by project team members and studies retrieved using key search terms as a guide.

Inclusion Criteria

- Studies using both quantitative and qualitative methodologies.
- Studies published in peer-reviewed journals.
- Studies published between 1990 to present.
- Studies published in the English language.
- Studies about Canadian and international Veteran populations with combat experience and their families. This included literature that examined both combat Veterans who were still in military service and combat veterans who were no longer in military service. The term “family” was broadly defined to include literature that focused specifically on certain family members (e.g., spouse/partner, children) as well as literature that discussed families as a whole without emphasis on particular members.
- Studies that examine the association between a Veteran’s OSI and family mental health (broadly defined as physical, psychological, emotional, behavioral, and social well-being).
- Emphasis was placed on literature describing primary research. Review/perspective articles were scanned to ensure the complete retrieval of relevant primary research noted therein. In addition, some review/perspective articles were used to support a discussion of findings generated from primary research articles.

Exclusion Criteria

- Studies that examine combat Veteran populations but do not include a discussion of the mental health/well-being link/impact on family members.
- Studies that examine Veteran populations involved in conflicts prior to 1990, except studies that focus on Veterans involved in the Vietnam War (these studies were included for comparison purposes of family well-being/mental health impact but only included in the analysis if it was clear that, as foundational studies, they added weight to the analysis of post-1990 conflict studies.)

4) Charting the data

At this stage of the process, an analytic data extraction tool is developed and used as a framework organizing the documentation of key features of each study included in the review (Levac, Colquhoun, & O'Brien (2010).

In this review, key information was extracted as each study was reviewed and documented within an Excel spreadsheet developed specifically for this purpose. This information included the title, authors, journal, year of publication, key words, targeted audience,

research location, the key focus of the article, stated objectives, definition of “Veteran”, the conflict in which the study participants were involved, a summative statement(s) extracted from the abstract, details about the sample or participants, methods, data collection instruments, findings, and implications.

5) Collating, summarizing and reporting the results

This is the most extensive phase of the scoping review process (Levac, Colquhoun, & O’Brien, 2010) and involves the implementation of a descriptive/analytical process designed to identify and compare key themes within the extracted data. In this review, the information recorded was organized and reported thematically, again, using the focus questions as a guide. Gaps in knowledge were identified through ongoing analysis of the themes emerging from the review. Themes were grouped into “strong”, “developing”, and “new” evidence categories.

6) Consultation

Periodic consultation among project team members and with key stakeholders is a significant element of the scoping review process. This ensures ongoing alignment of documented outcomes of the review with the intended goals. Project team members regularly consulted with each other through team meetings and with VAC colleagues.

Phase 2: Environmental Scan

An environmental scan of programs and services for family members who have a Veteran experiencing an OSI was implemented as a component of this project. An Internet search was completed for programs and services in Canada, the United States, the United Kingdom, Australia, and New Zealand. Additional programs and services were identified from journal articles reviewed. Resources that met the inclusion criteria were then subjected to further analysis by extracting information about country of origin, date of inception, organization responsible for offering the program/service, delivery method, type of program, focus of program, and target audience. This information was examined for themes and trends which then informed the completion of a SWOT (strength, weakness, opportunity, and threat) analysis in the Canadian context.

Chapter 2: Impact on Family Mental Health and Well-being

Overview of Research Sources

Based on the literature reviewed, this section focuses broadly on the relationships between combat (and/or deployment more generally), OSIs (primarily PTSD), and the family. The existing research investigates the impacts of a Veteran's OSI on the family, but also how various aspects of the family (such as family functioning, family support, etc.) can impact a Veteran living with an OSI. Various aspects of the family are examined in the research reviewed, and multiple terms are used to denote family dynamics, including family functioning, family relations, family cohesion, family problems, and the family cycle. Less often is there an explicit concern for family well-being or the mental health of family members. There is growing interest in tracking, assessing, and improving family-centered care in relation to Veterans living with an OSI. Almost all of the literature deals with the families or family functioning of male Veterans, and implicitly with heteronormative families. The vast majority of research studies reviewed in this section are quantitative and cross-sectional, rely on standardized self-report measures, and are based on the US combat Veterans population.

One hundred and sixty five references were retrieved and considered for inclusion. After a full review, 49 were excluded because they did not address the research question. Other references (n=39)—specifically, commentaries, special issue introductions, a book review, a book, policy reports, briefs, or summaries, editorials, a special communication, summary reports, literature reviews, a lecture, and a PhD thesis—were also excluded, as were those (n=6) articles that focused on Veterans of World War II (n=2), the 1982 Lebanon war (n=3), and Portuguese colonial wars (n=1). One research article was added to the reference list through reference mining and one had to be excluded because we could not access it. The 48 references in the final list include 38 research studies, and the remaining articles are literature reviews, descriptive articles, and a theoretical piece that were closely aligned with the research question. Sixty percent of the articles included were published between 2010-2014 (See Table 1), which speaks to the growing research interest in the family and in family-centered care in relation to Veterans with OSIs. With the exception of 1 article from Canada, 1 from New Zealand, 1 from Australia, and 1 with a comparative/international focus, all of the reviewed literature is from the US (See Table 2). The vast majority of articles focus on US Veterans of the wars in Iraq and Afghanistan, with eleven articles dealing with Vietnam War Veterans (two of them with Australian and New Zealand Vietnam war veterans respectively). In the US literature, the term Veteran is used almost exclusively to refer to combat Veterans of particular wars. In some cases, the Veterans have retired from military service, but in most cases the studies were conducted with serving military personnel who had experienced combat and their family members. Therefore, in this review the term “Veteran” is used in reference to combat Veterans if not specified otherwise.

Table 1. Family sources distribution across time

Years	Research (n=38)	Perspective (n=10)
1990-1999	8	0
2000-2009	9	2
2010-2014	21	8

Table 2. Family sources distribution across location

Country	Research (n=38)	Perspective (n=10)
Australia	1	0
New Zealand	1	0
Canada	1	0
United States	35	9
Other (comparative)	0	1

Themes

The main themes that emerge from the analysis of the literature are:

1. There is strong evidence for the negative effects of deployment, combat, and/or PTSD on family functioning and family well-being.
2. There is some evidence that family support (as an aspect of “social support”) positively impacts the diagnosis and treatment of Veterans with PTSD, while family concerns can also negatively impact Veterans’ mental health.
3. There are two important emerging areas of research interest: a) the bidirectional impact between OSIs and the family; and b) the functioning and well-being of the families of female Veterans living with the psychological effects of combat exposure and/or deployment.

The Effects of OSIs on the Family

There has been sustained interest over the past decades in examining the effects of deployments, combat, and/or PTSD on Veterans and their family members. The relationship between deployment, combat, and OSIs is not always clearly defined, but often discussed in conjuncture with one another. Combat experience itself does not necessarily have a negative effect on family functioning or the family cycle: US Vietnam combat Veterans were more likely to marry than non-combat Veterans, and military service in Vietnam reduced the probability of marital dissolution for some US men (Call & Teachman, 1991; Heerwig & Conley, 2013). However, other studies focused on US Vietnam Veterans highlight that combat experience has significant negative impacts on family functioning and can increase family violence (Glenn, Beckham, Feldman, Kirby, Hertzberg, & Moore, 2002; Gold, Taft, Keehn, King, King, & Samper, 2007; Jordan, Marmar, Fairbank, Schlenger, Kulka, Hough, & Weiss, 1992; Hendrix & Anelli, 1993; Hendrix, Jurich, & Schumm, 1995). A study of Vietnam Veterans in New Zealand also highlights the negative effects of PTSD on interpersonal relations, which in turn manifest in

poorer family functioning and marital adjustment (MacDonald, Chamberlain, Long, & Flett, 1999).

Studies of Veterans of the wars in Iraq and Afghanistan have also found negative effects of combat, deployment, and/or PTSD on both family functioning and the well-being of family members (Taft, Panuzio, Schumm, & Proctor, 2008). Half of OEF/OIF Veterans who screened positive for PTSD in one study were found to have increased difficulties in their relationship with their partner and lower family cohesion compared to Veterans seeking treatment for other health problems (Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012). A study of 332 National Guard members and 212 significant others found similar levels of mental health problems between Veterans post-deployment and their significant others (Gorman, Blow, Ames, & Reed, 2011). PTSD symptoms and mental health problems in a Veteran and family member can have negative influences on reintegration. As Marek & D’Aniello (2014) found, PTSD symptoms and the presence of mental health problems in Veterans and their partners are associated with higher levels of reintegration-related stress. The negative effects of deployment, combat, and OSIs are felt not only by Veterans, and their spouses and children (see other sections of this review), but likely by the extended family. One of the few studies based on surveys and interviews with a variety of family members (n=23) of US Veterans of the wars in Iraq and/or Afghanistan found significant levels of relationship distress among parents, partners, and siblings of Veterans (Demers, 2009). Family members need to respond not only to the psychological impacts but the Veteran’s need for emotional support. OSIs can take their toll on caregivers of Veterans who put in vast amounts of labor, time, and emotional support. The importance of not only paying attention to spouses but also to other family members such as parents was underscored in one study. In that study on the caregivers of OEF/OIF, Veterans’ parents were twice as likely as spouses to be taking on caregiving responsibilities, while more than three-quarters of caregiving was done by a female family member (Griffin, Friedemann-Sanchez, Jensen, Taylor, Gravely, Clothier, Simon, Baines, Bangerter, Pickett, Thors, Ceperich, Poole, & Ryn, 2012).

Significantly, PTSD interacts with other variables to impact family functioning. For example, different “coping styles”, such as approach coping versus avoidance coping, interact with post-deployment PTSD symptoms to impact family functioning in Veterans of Operation Desert Shield/Storm (Creech, Benzer, Liebsack, Proctor, & Taft, 2013). Another layer in understanding the negative effects of PTSD on families is how families perceive OSIs. Insufficient knowledge about the stages of deployment, including the post-deployment stage, and of the impact of combat-related operational stress can create a host of negative outcomes for family functioning (Laser & Stephens, 2011; Saltzman, Pynoos, Lester, Layne, & Beardslee, 2013). This suggests the need for a treatment approach that emphasizes psychoeducation, shared family narratives, and communication and resilience skills (Saltzman, Lester, Beardslee, Layne, Woodward, & Nash, 2011; Saltzman, Pynoos, Lester, Layne, & Beardslee, 2013).

OSIs, and PTSD in particular, create stressors for families and family functioning. The negative effects of PTSD on Veterans’ families have been theorized through concepts such as secondary/vicarious traumatization, ambiguous loss, caregiver burden, couple adaptation, the cognitive-behavioral interpersonal model (Dekel & Monson, 2010), and moral injury (Nash &

Litz, 2013). Many of these are discussed in detail in relation to spouses and children in other sections of this report.

The Effects of the Family on a Veteran Living with an OSI

Family support, as an aspect of “social support”, may impact the diagnosis and treatment of a Veteran with PTSD; however, there are conflicting findings in this regard. Hope was associated with social support and identified as useful in the treatment of US Vietnam Veterans with PTSD (Irving, Telfer, & Blake, 1992). A study of 536 OIF/OEF Veterans found that Veterans were less likely to screen positive for PTSD if they had high levels of social support (Duax, Bohnert, Rauch, & Defever, 2014). Wright, Kelsall, Sim, Clarke, & Creamer (2013) did not find sufficient research to conduct a meta-analysis in regards to the question of social support and PTSD, but noted that 3 out of 5 studies for which they were able to compare data indicated a strong connection between lack of family support and a Veteran’s PTSD. However, a study among US Vietnam Veterans found that perceptions of social support do not necessarily predict PTSD symptoms in Veterans (Laffaye, Cavella, Drescher, & Rosen, 2008). Similarly, a study of Vietnam and OEF/OIF Veterans showed that neither family members’ recognition nor disapproval were associated with PTSD or depression in Veterans (Schumm, Koucky, & Bartel 2014, p. 56). Relationships and social support were recognized as psychosocial concerns by 37 percent and 20 percent of OEF/OIF combat Veterans in one study (Strong, Ray, Findley, Torres, Pickett, & Byrne, 2014). While significant, it is worth noting that they did not rank as high as pain (72 percent), sleep (62 percent), cognition (61 percent), vocational issues (53 percent), education (49 percent), and finances (42 percent). Currently, there is no clear evidence in regards to how significant the impact of family support (and other social support) is on Veterans with PTSD. There is also an interest in examining other aspects of family life that can impact Veterans with PTSD or other OSIs. For example, family responsibilities (among other readjustment stressors) may lead Veterans to seek treatment for PTSD (Interian, Kline, Callahan, & Losonczy, 2012), while family readjustment (including family) stressors may negatively impact the mental health of Veterans. A survey with 1665 US National Guard members, for example, showed that family problems are a significant aspect of the readjustment problems that negatively affect the mental health of Veterans post-deployment, especially in regards to suicide ideation (Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011). Another study based on self-report questionnaires of 100 US National Guard soldiers found a significant association between relationship concerns and PTSD symptoms (Khaylis, Polusny, Erbes, Gewirtz, & Rath, 2011). Sayers, Farrow, Ross, & Oslin (2009) also found a significant association between family reintegration difficulties and OSIs, specifically depression and PTSD, in their study of OEF/OIF Veterans who had recently returned from combat. Family functioning moderately predicts PTSD symptoms (Evans, Cowlshaw, & Hopwood, 2009).

There is recent interest in the question of how families can support the treatment and care of Veterans (Link & Palinkas, 2013). Earlier studies on family-based skills-building intervention with Vietnam Veterans and family members showed mixed results (Glynn, Eth, Foy, Ubaitis, Boxer, Paz, Leong, Firman, Salk, Katzman, & Crothers, 1999). In addition to specific couple therapies and parent-child treatments, the emphasis here is more broadly on family functioning and the family as a whole.

It is frequently noted in this literature that there is a need for and an interest, among Veterans and their families, in family-centered care and treatment modalities (e.g. Batten, Drapalski, Decker, DeViva, Morris, Mann, & Dixon, 2009; Khaylis, Polusny, Erbes, Gewitz, & Rath, 2011). The potential importance of family members other than the spouse is underscored in a study involving adult Veteran children transitioning to life after service. Their parents were key to recognizing mental health problems in their children and helping them access health care (Worthen, Moos, & Ahern, 2012).

Different family-centered care and treatment models are being put forth in the literature. For example, medical family therapy relies on “cognitive–behavioral, narrative, and family systems methods to promote the goals of agency and communion” (Collins & Kennedy, 2008, p. 996). Similarly, the concept of ambiguous loss has been used in the clinical context to inform “a family- and resiliency-based approach [that] builds heavily on narrative and cognitive–behavioral methods within the family system” (Collins & Kennedy, 2008, p. 997). Another example is multifamily group (MFG) treatment which “incorporates psychoeducation, communication training, and problem-solving skill building, and it increases social support through its group format” (Sherman, 2012, p. 349).

There is an emerging literature examining the role of family-focused intervention in cases where a service member is living with a TBI (Dausch & Saliman, 2009; Hall, Sigford, & Sayer, 2010; Ford II, Wise, Krahn, Oliver, Hall, & Sayer, 2014; Perlick, Straits-Troster, Strauss, Norell, Tupler, Levine, Luo, Holman, Marcus, Dixon, & Dyck, 2013; Straits, Strauss, Tupler, Dyck, Norell, Misal, Holman, & Perlick, 2011; Straits, Gierisch, Strauss, Dyck, Dixon, Norell, & Perlick, 2013). Such an approach is viewed as useful because it can address both individual and family functioning. While some family-centered practices have been routinely adopted in the US VA health system, overall the family-centered model of care is still a work in progress.

Emerging Questions

The Interrelationship between PTSD and the Family

Most of the studies assume a unidirectional, linear relationship between combat, PTSD, and negative family functioning or between family support and the mental health of a Veteran. For example, Evans, Cowlshaw, & Hopwood (2009) ask: “(a) whether family functioning predicts changes in posttraumatic stress disorder (PTSD) symptoms *or* (b) whether PTSD symptoms predict changes in family functioning” (p. 531, emphasis added). The study by Ray & Vanstone (2009) stands out in that it looks at the interrelationship between PTSD and the family, and does not assume or try to ascertain a unidirectional impact as most of the literature does. In their qualitative study involving Canadian soldiers who had deployed as peacekeepers, Ray & Vanstone (2009) show that PTSD has a negative impact on family relations, and that this negative impact in turn affects the healing process of Veterans with PTSD.

Female Veterans and the Family

There is a dearth of knowledge about how OSIs in female Veterans affect their families and how family support impacts the mental health of female Veterans. While a few of the research studies in this review included both male and female Veterans, only 2 articles specifically investigated

the families of female Veterans. A study involving 79 female OEF/OIF Veterans indicated the importance of interpersonal issues (including family issues) as stressors for female Veterans, both during and post-deployment (Yan, McAndrew, D'Andrea, Lange, Santos, Engel, & Quigley, 2012). Furthermore, Gewirtz, McMorris, Hanson, & Davis (2014) show that mothers who had returned from a deployment struggled more with family adjustment and mental health symptoms compared to non-deployed mothers in families in which a parent had deployed.

Evidence Summary

Strong	Developing	Emerging
Negative impact of PTSD on family functioning and well-being	Specific factors and mechanisms that determine impacts of PTSD on family functioning and well-being	Bidirectional impacts of OSIs on family and vice versa
	Impacts of family support and/or family readjustment issues on Veteran with OSI	How OSIs impact families of non-traditional Veterans (e.g. female)
		Evaluation of family-centered care and treatment modalities

Future Research Directions

OSIs create stressors for families and family functioning, but little is known about OSIs beyond PTSD as they interrelate with the family. In particular, more research is needed on the complex bidirectional impacts of OSIs on the family. Correlation or even causality may paint an overly simplistic picture of the dynamic interactions. More research is needed to identify the factors and mechanisms that interact with OSIs and family functioning to produce particular outcomes. These factors may include family support, coping and communication skills, family members' knowledge about OSIs and their impact, family-centred care and treatment modalities, and much more. Gender norms may also be one such factor to consider in particular, but not only, in relation to female Veterans and their family dynamics.

Future research needs to pay more attention to family members beyond spouses and children, especially parents of adult Veterans as well as siblings. In general, a less rigid understanding of the family and an acknowledgement of non-traditional families, such as blended families, same-sex families, or families with special needs children would be important to consider. In addition to studying male Veterans and their families, more attention could be paid to non-traditional Veterans, whether they be female, visible minorities, or other Veterans. Future research also needs to go beyond a focus on serving members who experienced combat (the definition of the Veteran most often used in the literature) to investigate the long-term bidirectional impacts of OSIs on the family after Veterans retire from military service. The *Millennium Cohort Study* promises to address at least some of these gaps in the US context.

Most significantly, the review only included one study on Canada, and specifically on soldiers deployed as peacekeepers to Somalia, Rwanda, or the former Yugoslavia. There is an urgent need for Canadian research on how the OSIs of Canadian Afghan war Veterans may be affecting

the well-being of their families as well as how family life may be impacting the diagnosis and treatment of Canadian Afghan war Veterans. Finally, it would be crucial to begin assessing through research the existing family-centered care and treatment modalities that are being used in the Canadian context.

Chapter 3: Impact on Spousal & Partner Mental Health and Well-being

Overview of Research Sources

Most of the research reviewed was quantitative, retrospective, and cross-sectional in design. Self-report, psychometric measures were generally used. Theoretical frameworks were rarely identified. Qualitative studies focusing on context, meaning, and motive were in the minority.

The research reviewed yields knowledge of the linear associations between the operational stress injury in the Veteran and outcomes for the spouse. This relationship is largely presented as unidirectional. Reciprocal and overlapping effects are rarely studied. This means that consideration of the predisposing and enabling conditions moderating the relationship between OSIs in the Veterans and the well-being of spouses, while emerging, is understudied. Resilience or post-traumatic growth, while referred to by a small number of researchers, did not appear as a specific focus in any of the studies reviewed. Assumptions of family homogeneity were also prominent. No studies focused on lesbian/gay/bisexual/transgender (LGBT) families, single-parent families, or other family forms other than the traditional, heterosexual two-parent family.

Two hundred and one (201) research articles pertaining to the experiences of the spouses of military combat Veterans were retrieved. Of this number, 126 were included in this review and an additional 18 were mined from reference lists for a total of 144 articles. Of the 144 articles reviewed, 18 focused on programs, services, and clinical interventions and five were review articles. All other articles were reports of primary research. The country of origin of the research was varied, although most studies reviewed are American and pertained to the OIF/OEF combat deployments. Other countries represented are Croatia, Canada, Australia, Israel, and the United Kingdom.

Different combat eras were included. Vietnam-era research was reviewed for its foundational significance. The Gulf War, the Bosnian War, OIF/OEF combat missions were also included. In a few instances, studies involving Veterans and family members involved in the Yom Kippur War in Israel were included because of their seminal nature in illuminating key aspects of the experiences of military Veteran spouses.

Table 3. Spousal sources distribution across time

Years	Research (n = 140)	Perspective (n = 4)
1990-1999	17	0
2000-2009	45	1
2010-2014	78	3

Table 4. Spousal sources distribution across location

Country	Research (n = 140)	Perspective (n = 4)
United States	113	4
Canada	5	0
Australia	1	0
Israel	11	0
Iran	2	0
Kuwait	1	0
Croatia	6	0
Holland	1	0

Themes

The main themes that emerge from the analysis of this literature are:

- 1) Relationship Quality. There is strong evidence in the literature reviewed supporting claims about the negative impacts of OSIs on the quality of relationships between Veterans and their spouses. Emerging evidence is bringing into view understandings of the mechanisms moderating the association between OSIs and relationship quality.
- 2) Intimate Partner Violence. Intimate partner violence is a significant interpersonal outcome of OSIs and is strongly associated with diminished relationship quality within the studies reviewed.
- 3) Caregiving Spouse. Spouses of veterans are engaged in active and ongoing caregiving of their Veteran-partners living with OSIs. In most cases, this relationship is understood as “caregiver burden”, but a scant number of studies reviewed reveal positive outcomes associated with caregiving.
- 4) Secondary Trauma. OSIs may incite a chain reaction within the family such that spouses may experience many of the same symptoms as the Veteran living with the OSI. Studies reviewed discuss this as a significant intrapersonal outcome for spouses. Some studies emphasize the moderating or buffering effects ameliorating the relationship between primary and secondary trauma.

Two additional sections were added to this section of the report:

- 5) Family Support Programs, Services and Clinical Interventions
- 6) Future Directions

Relationship Quality

OSIs are associated with intrapersonal and interpersonal outcomes for combat Veterans and their families, including spouses. There is significant emphasis in the literature on the impact of these outcomes on relationship quality.

Studies of Vietnam combat Veterans first generated findings supporting the claim that combat results in PTSD and anti-social behavior which, in turn, intensifies marital problems (Gimbel & Booth, 1994) and discomfort with intimacy (Riggs, 2014). These studies were followed by others reporting higher levels of caregiver burden and lower relationship satisfaction (Beckham, Lytle, & Feldman, 1996; Manguno-Mire, Sautter, Lyons, Myers, Perry, Sherman, & Sullivan, 2007) for spouses of Veterans diagnosed with PTSD and a positive relationship between combat exposure, PTSD, depression, and levels of marital satisfaction and perceived social support (Renshaw, Rodrigues, & Jones, 2009). The general conclusion drawn from the Vietnam-era studies is that spousal perceptions of symptom severity are positively correlated with spouses' psychological and relationship stress (Renshaw, Rodebaugh, & Rodrigues, 2010).

Relationship stress may emerge acutely during the reintegration period following a combat deployment and may manifest in depressive symptoms, relational uncertainty, and partner interference contributing to "relational turbulence" (Knobloch, Ebata, McGlaughlin, & Ogolski, 2013). Couples in which the male serving member is living with PTSD report more conflict, less intimacy, less consensus, less cohesion, and less expressiveness than other couples (Solomon, Waysman, Belkin, Levy, Mikulincer & Enoch, 1992). Some studies suggest that these and other effects are long term, negatively affecting relationship quality (Miller, Wolf, Reardon, Harrington, Ryabchenko, Castillo, & Heyman, 2013) and relationship adjustment (Erbes, Meis, Polusny, Compton, & Wadsworth, 2012) over time.

One of the few Canadian studies investigating the impact of a diagnosis of a service-related disability on Canadian Veterans of the Vietnam War also expose the long-term problems with family and marital adjustment (Stretch, 1991). The findings of this study align with outcomes of other studies that reveal issues with expressiveness, self-disclosure and establishing intimacy (Carroll, Rueger, Foy, & Donohue, 1985; Riggs, Byrne, Weathers, & Litz, 1998) and conflict, less consensus and less cohesion than other couples (Solomon, Waysman, Belkin, Levy, Mikulincer, & Enoch, 1992), poor communication, emotional distance and high levels of anger and resulting feelings of sadness, isolation and stress (Mansfield, Schaper, Yanagida, & Rosen, 2014), marital instability (Gimbel & Booth, 1994) and communication problems associated with tendencies of dual trauma couples to avoid discussing trauma symptoms (Nelson Goff, Irwin, Cox, Devine, Summers, & Schmitz, 2014).

Similar themes can be found in a study of OIF/OEF treatment-seeking Veterans who screened positive for PTSD. These individuals scored lower on satisfaction with their romantic partners, their family dynamic, social functioning, life satisfaction, social support, resilience, and coping compared to treatment-seeking Veterans without PTSD (Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012). Moreover, the findings of a study suggesting that Veterans with PTSD have lower secure attachment and higher insecure attachment compared to those without PTSD (Ghafoori, Hierholzer, Howsepian, & Boardman, 2008) may provide one explanation for some of these outcomes as well as higher divorce rates. Negative outcomes may be exacerbated through

the co-occurring impacts of PTSD, physical impairments, high rates of alcohol and/or drug abuse, and psychological and physical aggression (Hayes, Wakefield, Andresen, & Scherrer, 2010).

Clinical studies identify emotional numbing as a particularly problematic psychological condition experienced by Veterans diagnosed with PTSD. Emotional numbing results in diminished interest in significant activities, feelings of detachment or estrangement from others, and diminished affect. These outcomes are associated with issues in intimate relationships (Galovski & Lyons, 2004), particularly greater relationship and psychological distress in spouses (Renshaw & Caska, 2012).

Ray and Vanstone (2009), in a qualitative Canadian study involving secondary data analysis of interviews with ten former peacekeepers who had been deployed to Rwanda, Somalia, and the former Yugoslavia and who had been receiving treatment for PTSD for at least two years prior, affirm that emotional numbing and the anger it evokes are significant interpersonal issues. Veterans experiencing this symptom may distance themselves from supportive family members, which, in turn, intensifies the emotional numbing and related anger. These researchers contend that this cycle causes turmoil for affected Veterans and diminishes the capacity of the Veterans to maintain healthy intimate relationships.

A study of 1512 male and female Operation Desert Storm Veterans (Taft, Panuzio, Schumm, & Proctor, 2008) substantiates the centrality of emotional numbing in the PTSD response and also brings into view other practices such as withdrawal, arousal, and lack of control which are significantly, yet indirectly, associated with the negative effects of combat exposure on marital adjustment. This study stands out among others because the sample includes both males and females, a prospective design was used wherein combat exposure was assessed immediately upon the Veteran's return from deployment, and because it examined specific PTSD symptom groupings.

Two studies provide further detail on the relationship between PTSD and relationship quality while also linking these outcomes to increased risk for physical health problems. In one study (Caska, Smith, Renshaw, & Allen, 2013), couples where the Veteran is living with PTSD, compared to couples in a control group, reported increases in systolic blood pressure and coronary heart disease while also scoring higher for couple conflict, disaffection, and anger. These findings were corroborated in a subsequent study testing the hypothesis that the strains in intimate relationships related to PTSD contribute to increased risk for coronary heart disease for Veterans and their spouses. Cardiovascular reactivity to the interpersonal conflict associated with PTSD (Caska, Smith, Renshaw, Allen, Uchino, Birmingham, & Carlisle, 2014) reinforces understandings of the interdependent relationships between psychological, physical, and relational health.

Other studies also focus on the synergies between psychological, physical, and relational well-being within the relationships of Veterans with OSIs and their spouses. Anticevic & Britvic (2008) examined the relationship between PTSD and sexual functioning in a study involving 101 PTSD-diagnosed Veterans of the Croatian War. Comparative analysis of data collected from the Veterans compared to data collected from a control group of 55 healthy volunteers receiving

health care in an outpatient clinic suggests that lower sexual desire, lower frequency of sexual activities, and more frequent erectile dysfunction are associated with PTSD and may be side effects of the antidepressant medication often prescribed. Similarly, Nelson Goff, Crow, Reisberg, and Hamilton (2007), in a study designed to test the relationship satisfaction component of the *Couples Adaptation to Traumatic Stress* (CATS) model as it pertains to trauma symptoms, found that high levels of PTSD symptoms in the Veteran, particularly symptoms affecting their sexual lives, dissociation, and sleep disturbances, significantly predicted lower relationship satisfaction for both themselves and their spouses.

Limitations in the studies focusing on the associations between PTSD in combat Veterans and relationship quality were addressed by Ponder, Aguirre, Smith-Osborne, and Granvold (2012) in their exploratory survey designed to identify a broader range of variables influencing marital satisfaction among OIF/OEF Veterans and their spouses. While these authors collected their data at more than one military installation thereby addressing one of the limitations of other studies, counterintuitively, only 40% of the survey respondents scored in the distressed range on the Combat Exposure Scale (CES), the Relationship Assessment Scale (RAS), and the PTSD Checklist-Military (PCL-M). The authors note that this finding may be attributed to the fact that the data were only collected from the service member.

Further insight about the full range of outcomes can be gleaned from consideration of studies that build understanding of the contexts, meanings, and motives underpinning the associations between OSIs, particularly PTSD, and the quality of spousal relationships. While these studies are in the minority, they do provide a basis for exploring new areas of focus, revealing themes warranting further investigation.

One such study was conducted by Manguno-Mire, Sautter, Lyons, Myers, Perry, Sherman, & Sullivan (2007). This study refined the analysis of the association between PTSD and mental health outcomes for spouses through interviews with 89 cohabiting female partners of male Veterans seeking help through outpatient PTSD treatment clinics. The intensity and severity of some of the reported conditions are worthy of note and included overall psychological distress, depression, and suicidal ideation. What separates this study from others reviewed, however, is the multivariate analysis of predictors mediating the relationship between PTSD and the mental health of spouses/partners. These included level of involvement with the Veteran, perceptions of partner self-efficacy, barriers to mental health treatment, and level of engagement with clinical services. The authors of this study contend that each of these predictors have distinct correlates and potentially different implications within the family environment. They recommend separate analysis of these individual constructs through causal modeling analysis so as to identify appropriate interventions for Veterans and their partners.

The qualitative component of a larger mixed-methods study of trauma in 45 OIF/OEF soldiers and their spouses undertaken by Wick and Goff (2014) explored variables included in the CATS model. Using interpretive phenomenological theory as a theoretical/methodological framework, key themes emerged. These included open communication, conflict management, role quality, and role satisfaction, and empathy/affirmation/effort as subthemes within the general theme of support and individual and relational post-traumatic growth (PTG). Those reporting high

relationship satisfaction as per the themes identified also reported lower levels of PTSD in the combat Veteran.

Understandings of relational and interpersonal dynamics contributing to adaptation to traumatic stress in couples are augmented by another qualitative study (Karakurt, Christiansen, Wadsworth, & Weiss, 2013) examining intimate relationships of US reservists formerly deployed to Iraq and their spouses/partners. Using family stress theory and attachment theory as sensitizing frameworks guiding the analysis of 101 interviews with 19 participants (both reservists and their spouses/partners), rich details about relationship processes emerged. These themes were: intermittent idealized closeness, discussed as a pattern of fluctuating closeness and disengagement, transitions from independence to interdependence, transitions in sources of instrumental and emotional social supports during and across deployments, and the renegotiation of roles during deployment and reunion. Intermittent idealized closeness and transitions from independence to interdependence were evident immediately after the return of the member while others effects were experienced later.

A survey instrument used in a study conducted by Runge, Waller, MacKenzie, and McGuire (2014) contained one open-ended question requesting information on the ways in which female partners of Australian combat Veterans mediated the “greedy” (Segal, 1986) institutions of the military and the family. Analysis of the responses (28.5% of the 1332 survey respondents) revealed findings on “ongoing impacts”, most of which were deemed to be related to spousal mental health, specifically the stress related to managing parenting responsibilities on their own and from the worry and anxiety about the Veteran/member’s mental health. Interestingly, in sharing strategies for mediating institutional and familial stresses, the respondents referred to their experiences, even the stresses, as opportunities for growth. Spouses indicated that their experiences were making them stronger and that they were proud of the military mission and of their partner’s service.

Similar findings resulted from a study conducted by Dekel, Goldblatt, Keidar, Solomon, and Polliack (2005), and, like other qualitative studies reviewed, stands out in contrast to the quantitative studies detailing the deleterious outcomes of service-related PTSD. Also using family stress theory as a theoretical framework, this phenomenological study focusing on the experiences and meanings held by nine female partners of Israeli Veterans diagnosed with PTSD yields insight on positive effects. Through analysis of in-depth semi-structured focus group interviews, accounts of the ways in which the injury shapes the physical and emotional lives of the women, of efforts to balance merging and individuation (Dekel, Goldblatt, Keidar, Solomon, & Polliack, 2005), and the experience of ambiguous loss (experiencing the partners as “present-absent”) (Boss, 2007) were revealed. Factors enabling positive outcomes included a deep commitment to remaining in the relationship and supporting the partner, clear boundaries, a moral/religious identity, and memories of the partner as he was before the diagnosis of PTSD. The women participating in this qualitative study describe their experiences as empowering and themselves as resilient, outcomes that vary significantly from other perceptions emerging from the studies reviewed.

These findings are substantiated in an Israeli study focusing on the impact of being a prisoner of war (POW) on marital adjustment. In this study, self-disclosure played a mediating role in buffering the relationship between marital intimacy and tendencies to avoid or disregard the symptoms of PTSD (Solomon, Dekel, & Zerach, 2008). Correspondingly, in a longitudinal study also carried out in Israel (Solomon & Dekel, 2008), loneliness emerged as a critical mediator between having PTSD and marital adjustment ten years after the combat experience. Additionally, forgiveness and self-differentiation in the non-traumatized partner emerge as two intriguing mediators in a study of 89 wives of POWs with PTSD. In particular, high self-differentiation predicted low levels of emotional and marital distress while increased forgiveness was associated with lower levels of emotional distress only (Dekel, 2010).

Results of qualitative studies yield formative evidence of mechanisms and mediating factors pertinent to PTSD and intimate relationships. A study undertaken by Bergman, Renshaw, Allen, Markman, & Stanley (2014) identifies constructs that may have a buffering effect. Specifically, spousal perceptions of meaningfulness of service predicted greater marital satisfaction independent of the Veteran's perception of meaningfulness. Moreover, tolerance, patience, and empathy served to mediate negative symptoms of Veteran PTSD for spouses (Erbes, Meis, Polusny, & Compton, 2011), as do acknowledgement of the injury by the Veteran (Renshaw, Rodrigues, & Jones, 2008) and external attributions that help the spouse make sense of the injury and its effects (Renshaw & Campbell, 2011; Renshaw, Allen, Carter, Markman, & Stanley, 2014). While these findings are cross-sectional and cannot infer causality, longitudinal investigation of this and other mediating constructs that have a protective effect, is warranted.

Other mediating and moderating variables emerged from the review of studies on relationship quality. Positive mediators included pre-trauma social support (King, Taft, King, Hammond, & Stone, 2006), post-trauma social support from family members, significant others, and military peers (Wilcox, 2010), spouse's own involvement in combat (Al-Turkait & Ohaeri, 2008), and the use of problem-focused coping strategies (as distinct from emotion-focused strategies) commonly taught through family psycho-education programs (Dimicelli, Steinhardt, & Smith, 2010). Moreover, emotional disclosure is identified as a significant strategy ameliorating the negative effects of the Veteran's emotional numbing on relationship satisfaction (Campbell & Renshaw, 2013), a finding that replicates outcomes of a previous study conducted by Solomon, Dekel, and Zerach (2008), and also augments these findings by demonstrating that the positive effects of emotional disclosure are sustained over time for both partners and the couple relationship.

Questions about directionality emerge from the analysis of research focusing on the relationship between OSIs and the quality of spousal relationships. It is difficult to discern from studies reviewed whether the PTSD caused relationship distress or whether these relationships were previously distressed. While it can be acknowledged that distinguishing relationship problems from trauma symptoms is difficult, it would seem that identification and analysis of potential predisposing factors is warranted. For example, further study of the antecedents and outcomes associated with numbing, avoidance, and other behavioural PTSD-related symptoms in the Veteran could further develop understandings of relationship quality. The need for this focus in ongoing research is endorsed by researchers as well as clinicians (Dekel & Monson, 2010;

Ghafoori, Hierholzer, Howsepian, & Boardman, 2008; Goff & Smith, 2005) who affirm that research supporting the ongoing development and evaluation of treatment modalities designed to promote intrapersonal and interpersonal healing is required.

Intimate Partner Violence

Intimate partner violence (IPV) was one of the first “impacts” of Veteran PTSD to be studied in the wake of the Vietnam War (Byrne & Riggs, 1996; Galovski & Lyons, 2004). To this point prevalence data is scarce, although a review article focusing on IPV (Marshall, Panuzio, & Taft, 2005) among military Veterans and active duty servicemen notes that rates of IPV across these military populations in the United States ranges from 13.5% to 58%, a wide range that underscores the difficulties associated with measuring this phenomenon.

While not focused specifically on Veterans, a Canadian study (Zamorski & Wiens-Kinkaid, 2013) has produced new data about IPV within the military population. Through a cross-sectional, population-based survey of currently-serving CAF members, it was determined that physical and sexual IPV was perpetrated in 9% of the population surveyed and experienced by 15%. Emotional and financial abuse was perpetrated by 19% of those surveyed and experienced by 22%.

Results of a study involving 236 male Vietnam Veterans conducted by Taft, Weatherill, Woodward, Pinto, Watkins, Miller, and Dekel (2009) indicate high aggression rates among the Veterans who had partners. It should be noted that causal conclusions cannot be drawn from this study because of the cross-sectional research design. Moreover, as most of the sample was comprised of Vietnam Veterans, results may not be transferable to Veterans engaged in combat at other times.

Teten, Schumacher, Taft, Stanley, Kent, Bailey, Dunn, & White (2010) attempt to address this issue through a study comparing the nature and frequency of self-reported IPV perpetrated by male OIF/OEF Veterans with and without PTSD with Vietnam Veterans with PTSD. OIF/OEF Veterans with PTSD were more likely to psychologically abuse their partners than their OIF/OEF counterparts without PTSD and these rates were comparable to the Vietnam Veterans with PTSD.

While obtaining objective self-reports of IPV is a challenge (Lamotte, Taft, Reardon, & Miller, 2014), overall effects include marital problems, lower levels of happiness and life satisfaction, and more demoralization (Jordan, Marmar, Fairbank, Schlenger, Kulka, Hough, & Weiss, 1992) in relationships where PTSD is a factor compared to those where it is not. Taft, Pless, Stalens, Koenen, King, & King (2005), using a subsample of data from the National Vietnam Veterans Readjustment Study (NVVRS), found that symptoms typically associated with PTSD in the Veteran such as comorbid mental health conditions and relationship problems predicted IPV. These findings are reinforced in a review article written as information and support for the family court community (Tinney & Gerlock, 2014). The intersection of IPV with co-occurring OSIs including PTSD, TBI, substance abuse disorder, and depression is discussed, and recommendations for effective screening and assessment strategies are offered.

Experiential avoidance, or the attempt to avoid painful memories and uncomfortable emotions, can be used as a coping strategy by the Veteran and is associated with diminished relationship adjustment and heightened physical and psychological aggression within military Veteran couples (Reddy, Meis, Erbes, Polusny, & Compton, 2011). Case study research brings into view three patterns that can describe the aggression and which emerge in relation to PTSD symptoms. These are violence committed in anger, disassociate violence, and parasomniac/hypnopompic violence (Finley, Baker, Pugh, & Peterson, 2010).

PTSD symptom severity is also a factor associated with the experience of IPV in Veteran relationships. Physical and verbal aggression against partners both increase as symptoms of PTSD become more severe. This finding is reported in an extensive review of the impact of combat exposure and PTSD on Veteran's families (Galovsky & Lyons, 2004) and substantiated through the research of Beckham, Feldman, Kirby, Hertzberg, & Moore (1997) and Orcutt, King, and King (2003). These latter studies also examined the role of risk factors such as early-life stressors and extreme war-zone stresses (Orcutt, King, & King, 2003), and lower socioeconomic status (Beckham, Feldman, Kirby, Hertzberg, & Moore, 1997) in intensifying IPV in the spousal/partner relationships of Veterans diagnosed with PTSD. These findings also support the claim that the symptoms of PTSD may be filtered through pre-existing or co-occurring factors that potentially buffer, or, in the case of IPV, exacerbate risk for the spouses. On the other hand, secure attachment to the spouse can be a significant protective factor (Frey, Blackburn, Werner-Wilson, Parker, & Wood, 2011).

An interesting addendum to this aspect of the analysis of impacts experienced in the intimate relationships of Veterans living with PTSD can be found in the work of Bradley (2007). This study focuses on the etiology of IPV by considering whether or not the propensity to engage in IPV increases, decreases, or remains constant once a member leaves service. Through use of cultural spillover theory (Baron, Straus, & Jaffee, 1988 cited in Jones, 2012), a framework that hypothesizes that violence will “spill over” from environments where it can be legitimized (the military) to other environments where it is not socially approved (intimate relationships, family relationships). Bradley (2007) advanced this hypothesis as well as a second one, specifically, that Veterans experienced in combat will be more likely to engage in IPV than non-combat Veterans or non-Veterans.

These hypotheses were not supported by the Bradley (2007) study, suggesting that military socialization will not necessarily impel Veterans to engage in IPV more often than civilians. In fact, the opposite was found. Interestingly, the second hypothesis was not supported either, which is at variance from other studies supporting a positive relationship between combat injuries and IPV. It can be argued that PTSD may be a sufficient predictor of negative outcomes within Veteran family relationships, but not a *necessary* predictor.

Caregiving Spouses

The symptoms of PTSD predict higher levels of psychological distress and perceptions of burden for spouses (Calhoun, Beckham, & Bosworth, 2002; Dekel, Solomon, & Bleich, 2005) and, while higher levels of neuroticism and avoidant coping in spouses is associated with greater perceptions of burden (Caska & Renshaw, 2011), Veterans' symptoms still remain a significant predictor of caregiver burden.

Caregiving spouses are challenged to maintain a sense of self and their independence and autonomy (Dekel, Goldblatt, Keidar, Solomon, & Polliack, 2005). In one of the few qualitative studies focusing on this topic, Dekel (2005) used a phenomenological model to explore how women married to Veterans with PTSD experience this reality and to reveal related meanings. While the participating women noted that their moral commitment to their partners ruled out the possibility of separation or divorce and while some claimed that they derived a sense of empowerment from the experience of supporting their partners, it was clear from the data collected that caring for the injured partner consumes physical and emotional resources such that maintaining a sense of self and control over personal space is a challenge.

These findings are corroborated through a study comparing the experiences of 154 Croatian War Veterans undergoing treatment for PTSD, their spouses, and a control group of 77 Veterans without PTSD, and their spouses. Results indicate that PTSD-Veteran spouses experience higher levels of caregiver burden and burnout (Klaric, Francikovic, Klanc, Kreic, & Petrov, 2009).

Specific dimensions of the relationship between PTSD symptoms and caregiving distress are revealed through analysis of data collected through self-report psychometric surveys administered to 181 female spouses of Australian combat Veterans as part of a study conducted by MacDonell, Thorsteinsson, Bhullar, and Hine (2014). Study results substantiate the claim that higher levels of PTSD symptoms in the Veteran correspond with higher levels of caregiver distress in six domains of experience. These are social isolation, hyper-vigilance, financial problems, intimacy problems, poor sleep, and exhaustion. Marital adjustment, mental health, and life satisfaction for the spouse were also associated with the experience of caring for the PTSD-Veteran and were mediated through two distress dimensions, specifically, intimacy and exhaustion.

While not focused on PTSD, but rather traumatic brain injury (TBI), another OSI, Phelan, Griffen, Hellerstadt, Sayer, Jensen, Burgess, & van Ryn, (2011) add to the understanding of potential moderators of caregiver stress. In this study involving 70 caregivers of US combat Veterans receiving rehabilitation services, perceptions of being discriminated against and stigma associated with caregiving exacerbated caregiver strain, social isolation, depression, and anxiety. Stigma, alone, was associated with low self-esteem, perceptions of discrimination, intensified strain and social isolation.

This study and the Australian study undertaken by MacDonell, Thorsteinsson, Bhullar, and Hine (2014) extend previous knowledge of the relationship between operational stress injuries and the caregiving experiences of spouses by focusing on factors mediating that relationship.

Secondary Trauma

Spousal caregiving in relationships where the combat Veteran is living with an operational stress injury may be complicated by secondary trauma. The research focusing on the partners of Vietnam Veterans provides a foundation for the analysis of the associations between Veteran combat, OSIs, and outcomes for spouses that suggest secondary trauma. In a pilot study using a control/experimental group design, the emotional and physical health of family members of Australian Vietnam Veterans was measured using self-report psychometric inventories. The spouses of the Veterans reported higher levels of somatic symptoms as well as anxiety,

depression, social dysfunction, nightmares, panic attacks, exaggerated startle response, and poor concentration compared to the control group (Westerlink & Giarratano, 1999). These partners also reported lower levels of self-esteem and saw themselves as being dysfunctional socially.

Research focusing on more recent combat deployments builds on the Vietnam-era research suggestive of secondary traumatic responses among spouses. In the later research, the experience of caring for a Veteran with PTSD is often described as inciting a “chain reaction”. Spouses of Veterans with PTSD experience higher levels of emotional distress and lower levels of marital adjustment than the general population (Dekel, Solomon, & Bleich, 2005). Increased mental health problems have also been documented (Jordan, Marmar Fairbank, Schlenger, Kulka, Hough, & Weiss, 1992). Spouses may become enmeshed (Johnson, Feldman, & Lubin, 1995) in the relationship, organizing their lives around the primary sufferer’s traumatic experience and his/her needs. Exhibiting some of the same symptoms as the primary sufferer (Lyons, 2001) such as depression, lack of self-care, hostility, withdrawal, difficulty maintaining concentration, and sexual dysfunction are detected in some instances.

This research suggests that spousal caregivers of Veterans directly affected by psychological trauma may become indirectly affected, an outcome described as secondary traumatic stress (Bride & Figley, 2009). Little is known about how the family members of military members and Veterans diagnosed with PTSD experience secondary trauma nor is there a full understanding of the processes by which secondary traumatization occurs within the individuals affected (Gavlovski & Lyons, 2004).

Most studies on secondary trauma are grounded in the assumption that there is a linear relationship between PTSD and the symptoms in spouses (Dekel & Monson, 2010). This is evident in a theory of transferred trauma advanced through the literature which claims that the symptoms are communicable (Bride & Figley, 2009; Goff & Smith, 2005).

Most of the research focusing on secondary trauma is designed to substantiate a linear relationship between PTSD in Veterans and secondary trauma symptoms in their spouses. Herzog, Everson, and Whitworth (2011) administered surveys to 87 households of National Guard members; 54 of these surveys included data from the member and his spouse. These data support conclusions drawn from other studies about the positive association between the symptoms of secondary trauma and the symptoms of PTSD (Dirkzwager, Bramsen, Ader, & van der Ploeg, 2005; Franciskovic, Stevanovic, Jelusic, Roganovic, Klaric, & Grkovic, 2007). These symptoms include the avoidance of thoughts, behaviours and emotions inciting images of a traumatic event(s). Moreover, higher rates of depression are also strongly correlated with secondary trauma (Herzog, Everson, & Whitworth, 2011).

A minimal number of studies focusing on secondary trauma are explicitly based on a theoretical model of traumatic stress in couples. One exception to this is the study conducted by Nelson, Crow, Reisbig, and Hamilton (2009). These researchers used the *Couples Adaptation to Traumatic Stress* (CATS) model to empirically describe the relationship between trauma exposure in the Veteran and secondary trauma in the spouse. Findings suggest that the intensity

of the primary trauma predicts greater secondary traumatic stress responses in their female spouses and that avoidance behaviours exacerbate this effect.

A study conducted in Iran (Ahmadi, Azampoor-Afshar, Karami, & Mokhtari, 2011) provides support for the claim that there is a positive association between degrees of PTSD in Veterans and severity of symptoms in their spouses. In this study, all participating spouses (n=100) reported moderate to severe degrees of secondary trauma and that these levels corresponded with the perceived impact of the injury in the Veteran. Notwithstanding this finding, the researchers note that the occurrence of trauma in these spouses could also be attributed to the effect of demographic factors, including social, cultural and religious meaning systems in Middle Eastern countries.

Other researchers use experimental/control group methodology to compare the level of psychological symptoms and perceived quality of life between spouses of combat Veterans with PTSD and those without PTSD. In a Croatian study conducted by Stevanovic, Francisovik, and Grkovic (2012), 36% of the sample of spouses (n=50) of Veterans with PTSD reported higher levels of the symptoms of secondary trauma compared to their counterparts married to Veterans without PTSD. Findings from an Israeli study using a similar methodology suggest that spouses of Veterans with PTSD experience higher levels of emotional distress than the control group (Arzi, Solomon, & Dekel, 2000). These spouses reported somatization, obsessive-compulsive problems, depression, and anxiety among other psychological and emotional health issues.

It is difficult to determine if the composition of spouses' secondary trauma is totally attributable to the primary trauma or if it is reflective of generalized psychological distress. Renshaw, Allen, Rhoades, Blais, Markman, and Stanley (2011), in a survey of 190 spouses of Veterans previously deployed to OIF/OEF, found that fewer than 20% of spouses attributed their symptoms entirely to their husband's military experiences. These findings suggest the need for further research examining the combined effects of multiple factors in the spouse's life and the mechanisms by which spouses of combat Veterans develop psychological distress.

Deterministic explanations of the relationship between PTSD and secondary trauma leave out in-depth analysis of mediating factors and the assumption that negative outcomes are a foregone conclusion is problematic. An exception can be found in a study undertaken by Mikulincer, Florian, & Solomon (1995) who suggest that marital intimacy may moderate the relationship between symptoms of primary trauma and secondary trauma. Goff and Smith (2005) also suggest this as possibility in their description of the *Couple Adaptation to Traumatic Stress* (CATS) model. In their analysis of the effects of trauma in general (not PTSD in particular), they note that trauma may galvanize positive adaptation. "The couple relationship may serve as a crucible or resource for healing for the primary trauma survivor through the development of attachment bonds, breaking dysfunctional patterns, and creating healthy functioning in interpersonal relationships" (p. 152). In addition to attachment, chronic stress, identification, empathy, and projective identification are identified as potential moderating factors. More needs to be known about these factors in the lives of spouses/partners of military Veterans.

Support Programs, Services and Clinical Interventions

A number of clinical interventions designed to address intrapersonal and interpersonal issues in the relationships of combat Veterans and their spouses have developed in recent years. It is suggested that most interventions, particularly partner-involved (Meis, Schaaf, Erbes, Polusny, Miron, Schmitz, & Nugent, 2013) and couple therapy positively affect relationship satisfaction during treatment (Doss, Rowe, Morrison, Libet, Birchler, Madsen, & McQuaid, 2011). A key factor associated with perceptions of program efficacy is their relevance to the military context (Verdelli, Baily, Voursora, Belser, Singla, & Manos, 2011).

Cognitive-behavioural conjoint therapy (CBCT) (Monson, Schnurr, Stevens, & Guthrie, 2004; Monson, Fredman, & Adair, 2008; Fredman, Monson, & Adair, 2010) focuses on the emotional, behavioural, cognitive and relational difficulties associated with PTSD and intersecting mechanisms affecting relationship adjustment. Participants develop knowledge of PTSD as a foundation for changing the beliefs that sustain the difficulties. Emphasis is placed on avoidance mechanisms, limited emotional expression, and diminished self-disclosure. Couples learn the communication skills that can help ameliorate negative effects. An independent clinician assessment and reports from participants provide endorsements for this therapeutic model. While PTSD symptom severity and Veteran's perceptions of relationship satisfaction were not positively affected, levels of depression and anxiety improved. Spouses/partners reported improved relationship satisfaction (Monson, Schnurr, Stevens, & Guthrie, 2004).

Other therapeutic approaches are available to PTSD Veterans and their spouses. Integrative behavioural couple therapy (IBCT) (Erbes, Polusny, MacDermid, & Compton, 2008) is designed to reduce conflict and develop intimacy through encouraging acceptance of the injury and its effects and the implementation of interpersonal skills. Case analyses of this approach suggest positive outcomes including the development of specific change strategies that ameliorate relationship distress. Evaluation of this model is required in order to demonstrate its efficacy in supporting change for couples living with combat-related PTSD.

As noted previously in this review, avoidance and emotional numbing complicate relationship quality for combat Veterans and their spouses and may be implicated in secondary traumatic stress responses. The Strategic Approach therapeutic model addresses these specific issues through a ten-session program emphasizing anxiety-reduction and stress inoculation techniques (Sautter, Glynn, Thompson, Franklin, & Han, 2009; Sautter, Armelie, Glynn, & Wielt, 2011). Formative evaluation of this intervention suggests improvements in behavioural avoidance and emotional numbing, although it is not clear whether or not these effects transfer to increased relationship satisfaction (Monson, Macdonald, & Brown-Bowers, 2012).

Other services and programs are discussed in the literature (Makin-Byrd, McCutcheon, Gifford, & Glynn, 2011). For example, complementary, alternative approaches to intervention are available as supports for Veterans and their spouses. One such program emphasizes emotional freedom techniques and energy psychology designed to address stress reduction and resource-building (Church & Brooks, 2014).

Other programs and services hold promise as supports for spouses of combat Veterans. These include telephone support groups (Nichols, Martindale-Adams, Graney, Zuber, & Burns, 2013)

and couples reunification retreats (Davis, Paul, Tarr, Eicher, Allinger, & Knock, 2012), military and non-military websites (Brown & Joshi, 2014), emotion-focused intervention (Jordan, 2011), group therapy (Armstrong & Rose, 1997) and self-directed integrative therapies that include guided exercise and massage (Collinge, Kahn, & Soltysik, 2012).

Evidence Summary

Strong	Developing	Emerging
Unidirectional relationship between combat Veteran OSIs (PTSD) and negative impacts on relationship quality, secondary trauma, caregiving experiences and intimate partner violence	Specific factors and mechanisms that affect impacts of OSIs on relationship quality, secondary trauma, caregiving experiences and intimate partner violence	Bidirectional and overlapping impacts of OSIs on relationship quality, secondary trauma, caregiving experiences and intimate partner violence
	In-depth analysis of secondary trauma in spouses	How OSIs impact spouses in non-traditional families
	Development, implementation and evaluation of clinical interventions, military/Veteran family support programs and other services and programs	Resilience and post-traumatic growth in the relationships of Veteran spouses

Future Research Directions

The analysis of research focusing on the relationship between OSIs in Veterans and wellbeing for spouses brings into view recommendations for future research:

A clear and consistent description of the interpersonal effects of traumatic stress is needed, particularly a theoretical description of the mechanisms at work in the relationship between PTSD and outcomes for spouses. To this end, there is value in revisiting the *Double ABC-X* model (McCubbin & Patterson, 1983) and its precursor, Hill's (1949) *ABC-X* model, in an effort to deconstruct assumptions of causality and linearity in the research. These models focus on predisposing factors, including prior strains, implicated in the development of stress responses in military members, Veterans, and their significant others. Application of these models may yield insight on *how* pre-existing vulnerabilities, such as mental illness, individual coping responses, and childhood trauma operate in intimate Veteran relationships where PTSD is a factor.

Knowledge of reciprocal effects also warrants scrutiny through research (Ray & Vanstone, 2009). Little is known about the extent to which the symptoms experienced by the spouse/partner

either mitigate or exacerbate the symptoms experienced by the Veteran with PTSD. Once again, it is evident that the reliance on linear analyses within the research needs to be expanded to accommodate investigation of the potential for mutually influential, interdependent processes.

Differential access to resources may affect predisposing or enabling conditions enveloping the experiences of Veteran couples where PTSD is a reality. Individual resources, such as financial stability, education, self-esteem, access to formal and informal supports, and a prior history of coping well through adversity may facilitate positive adaptation for these couples, or, in contrast, negative outcomes in those instances where these resources are not accessible or plentiful. These resources in combination with individual/couple strengths including cohesion, adaptability, shared power, and social support may serve as protective factors that influence adjustment to the trauma and its effects (Goff & Smith, 2005) and foster post-traumatic growth and resilience. More research on the PTSD-specific predisposing and enabling conditions and individual/couple strengths and their potential/actual impact as mediating factors (either risk or protective depending on whether they are present or not) in the intimate relationships of Veterans is warranted.

Through this review, questions emerge about the capacity of the military as a community to serve as a protective factor for military Veterans and their family members experiencing stress and health issues, particularly PTSD and secondary trauma. The theory of community action and change (Mancini & Bowen, 2013) holds promise as a means to addressing this gap in the research and could serve as a vehicle for analysis of the extent to which communities can be a resource for the families affected. This theory is based on the premise that families are open systems nested within formal and informal community networks. As families participate in these networks, community identification and attachment to the community are fostered. The effects of this are two-fold: 1) social-psychological equilibrium within the family is developed and maintained, and 2) social capital evolves which, in turn, contributes to the development of community capacity. Community capacity mobilizes collective responsibility for the well-being of the community and collective competence in managing stresses and adversity (Huebner, Mancini, Bowen, & Orthner, 2009). To this point, we know little about the extent to which community capacity within the military serves as a social-psychological mediator, perhaps as a conduit to military family resilience and post-traumatic growth. Investigation of the link between community capacity and military family experience, particularly in the face of potentially debilitating health conditions, is warranted.

Extension of the research focus on PTSD would offer balance to the body of research investigating the experiences of spouses of military Veterans. Moreover, future research needs to acknowledge variation in symptom severity. PTSD and other operational stress injuries may exist on a spectrum and this may impact how it is experienced in spousal and other family relationships.

The definition of a military Veteran *family* requires further reflection. Within the research reviewed, there is an implicit assumption of homogeneity. As noted in the Ombudsman's Report (2013), the military is heterogeneous and complex and so are military and Veteran families. Selection criteria for inclusion in research studies should expand to accommodate family diversity. Single parent families, LGBT individuals in Veteran families, and the parents and siblings of military Veterans are under-represented as participants in research studies.

The body of research focusing on spousal relationships would benefit from more randomized control trial studies, longitudinal studies investigating life course transitions (such as the *Timor-Leste Family Study* and the *Millennium Cohort Study*), and qualitative studies examining contextual mediators and mechanisms that facilitate resilience and post-traumatic growth for the families of military Veterans. This would balance the preponderance of retrospective, cross-sectional studies currently available.

Chapter 4: Impact on Child and Youth Mental Health and Well-being

Overview of Research Sources

Titles and abstract review of the potential references for inclusion yielded 112 distinct sources to proceed to full review. References were mined, indicating another 24 possible sources. Sources were excluded primarily because they focused on historical conflicts such as the Vietnam War or on the experiences or impacts of military service members being actively deployed. Ultimately, 64 titles were included for full analytic data extraction. Predominantly, the sources were perspective pieces (n=37 or 57.8%), which include editorials, commentaries, discussion papers, and reviews of selected literature with no methodology described. Approximately one third of the sources reported on research studies (n=21 or 32.8%), while 6 sources were legal reviews, policy reports, or evidence reports (9.4%). Although the databases were searched back to 1990, there were no sources dated prior to 2005. Since 2010, there has been a marked increase in all types of sources, which speaks to the rapidly increasing drive to identify and understand child and youth issues and needs when a family member has an OSI. Three quarters of the sources came out of the United States, with the other quarter distributed across Australia, the Balkans, Canada, Iran, Israel, and Portugal. The primary research drew on correlational data or self-reports, and explored the association of emotional, psychological, behavioural, social, and academic disruptions among children with parental mental health factors.

Virtually all the literature assumed or referred to what can be understood as traditional family structures, which typically included a male military service member, a female civilian caregiver, and children. While there is emerging recognition within the body of literature that this understanding of the family is likely out of step with current times, the literature on the whole presumes this family structure; although we recognize the inherent limitation of this assumption, we will need to work within it in our discussion of findings. In addition, the literature primarily discussed Post Traumatic Stress Disorder, with infrequent reference to depression, Traumatic Brain Injury, and substance abuse as forms of OSIs.

Table 5. Child sources distribution across time

Year	Research (n=21)	Perspective (n=37)	Reports (n=6)
2005	0	1	0
2006	0	0	0
2007	0	1	0
2008	1	4	0
2009	1	2	0
2010	2	5	0
2011	4	6	0
2012	3	4	2
2013	3	8	1
2014	7	5	3
2015 (- Feb 2015)	0	1	0

Table 6. Child sources distribution across location

Country	Research (n=21)	Perspective (n=37)	Reports (n=6)
Australia	0	1	0
Balkans	4	0	0
Canada	2	1	1
Iran	2	0	0
Israel	2	1	0
Portugal	1	0	0
United States	15	33	0
Unspecified	0	1	0

Themes

Analysis of the results suggests several themes for consideration.

1. While one cannot presume the presence of pathology or resiliency among children in military families generally, parental OSI impacts children and youth through a complex interplay of factors.
2. Collaboration and innovation across sectors are critical to explicitly support children and youth in families dealing with parental OSI
3. Significant gaps are present in this body of literature, necessitating multi-faceted approaches to researching this vulnerable population.

Parental Operational Stress Injuries Impact Children and Youth

Research on historical conflicts such as the Vietnam War suggests that children of Veterans with PTSD can experience significantly higher rates of mental health issues and lower rates of adaptive functioning than their age mates, which is suggestive of an intergenerational transmission of trauma (e.g., Caselli & Motta, 1995; Del Valle & Alvelo, 1996; Penn, Simpson, Legett, Edie, & Wood, 2008). Veterans with PTSD have reported reduced satisfaction and henperceptions of effectiveness in relation to their capacity to parent (e.g., Ruscio, Weathers, King & King, 2002; Samper, Taft, King, & King, 2004; Stretch, 1991). These findings are echoed in the sources reporting on the Balkan, Afghan, and Iraq conflicts, analyzed below.

When parents live with OSIs, they can experience a range of invisible issues such as irritability, emotional unavailability, hostility, and hypervigilance that are disruptive to family relationships (Arata-Maiers & Stafford, 2010; Cozza, Holmes, & Van Ost, 2013; Cozza & Lieberman, 2007; Danish & Antonides, 2013; Dekel & Goldblatt, 2008; Gewirtz, Pinna, Hanson, & Brockberg, 2014; Gorman, Fitzgerald, & Blow, 2010; Harrison, Albanese, & Berman, 2014; Janke-Stedronsky, Greenawalt, Stock, Tsan, MacCarthy, MacCarthy, & Copeland, 2015; Lester & Flake, 2013; Lieberman & Horn, 2013; Palmer, 2008; Reed, Bell, & Edwards, 2011; Sammons & Batten, 2008; Seamone, 2012; Ternus, 2010). These issues can impact a parent's ability to consistently negotiate and meet role expectations and household routines, which typically creates friction between family members as the distress an individual living with an OSI feels reverberates throughout the family (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic,

2014; Campbell, Brown, & Okwara, 2011; Cozza, Holmes, & Van Ost, 2013; Lester & Flake, 2013; Lester, Peterson, Reeves, Knauss, Glover, Mogil, & Beardslee, 2010; Lester, Stein, Saltzman, Woodward, MacDermid, Milburn, & Beardslee, 2013; Lieberman & Horn, 2013), leaving the family with a lower threshold for everyday stressors (Cozza, Holmes, & Van Ost, 2013).

While it is possible that maternal mental health can mitigate the impact of the OSI on child development (Dinshtein, Dekel, & Polliack, 2011; Lambert, Holzer, & Hasbun, 2014; Lieberman & Horn, 2013; Lincoln & Sweeten, 2011; Maholmes, 2012; McGuinness & McGuinness, 2014), this friction will, in some cases, lead to potential exposure to intimate partner violence (Campbell, Brown, & Okwara, 2011; Dekel & Goldblatt, 2008; Gorman, Fitzgerald, & Blow, 2010; McFarlane, 2009; Palmer, 2008; Pearrow & Cosgrove, 2009) as well as negative impacts on the caregiver's psychological wellbeing and capacity to meet the household maintenance demands (Ahmadi, Azampoor-Afshar, Karami, & Mokhtari, 2011; Cozza, Holmes, & Van Ost, 2013; Lester, 2012).

There appears to be a spillover effect of the OSI onto the spouse, who has been shown to demonstrate moderate to severe levels of secondary trauma and mental health issues (Ahmadi, Azampoor-Afshar, Karami, & Mokhtari, 2011; Campbell, Brown, & Okwara, 2011; Davis, Blaschke, & Stafford, 2012; Gorman, Fitzgerald, & Blow, 2010; Lester & Flake, 2013; Lester, 2012; Lincoln & Sweeten, 2011; Seamone, 2012). Strain and disintegration within the marital relationship are not uncommon (Gorman, Fitzgerald, & Blow, 2010; Holmes, Rauch, & Cozza, 2013), and the "increased burden and responsibility on the wife may reach a point where problems develop in her parental functioning" (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, Grgic, 2014, p. 301) that drain the parent of capacity to attend to the needs of the children (Gorman, Fitzgerald, & Blow, 2010).

Reductions in collaborative parenting and marital difficulties are not surprising under these conditions (Arata-Maiers & Stafford, 2010; Creech, Hadley, & Borsari, 2014). In fact, perceived parenting functioning and satisfaction is reduced for parents living with an OSI (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, Grgic, 2014; Cohen, Zerach, & Solomon, 2011; Cozza & Lieberman, 2007; Creech, Hadley, & Borsari, 2014; Harrison, Albanese, & Berman, 2014; Holmes et al., 2013; Palmer, 2008; Walsh et al., 2014) and higher rates of conflict with children are reported (Holmes, Rauch, & Cozza, 2013; Lambert, Holzer, & Hasbun, 2014).

The complex interplay of factors within the family dynamic makes it difficult to unequivocally determine a causal relationship between the parental OSI and levels of child distress (Gorman, Fitzgerald, & Blow, 2010; Lambert, Holzer, & Hasbun, 2014), with some evidence that genetic, physiological and environmental exposure factors are involved (Cozza, 2011; Smith-Osborne & Felderhoff, 2014). Nevertheless, these disruptions typically lead to inter-related family stress such that the OSI may be further exacerbated by family or child dysfunction, creating a vicious circle (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, Grgic, 2014; Campbell, Brown, & Okwara, 2011; Cozza, Holmes, & Van Ost, 2013; Danish & Antonides, 2013; Gorman, Fitzgerald, & Blow, 2010; Janke-Stedronsky, Greenawalt, Stock, Tsan, MacCarthy, MacCarthy, & Copeland, 2015; Walsh, Dayton, Erwin, Muzik, Busuito, & Rosenblum, 2014). In a 2015

study, there is suggestion that the family context may promote treatment seeking for the member with PTSD (Janke-Stedronsky, Greenawalt, Stock, Tsan, MacCarthy, MacCarthy, & Copeland, 2015).

Cozza states that “we must appreciate that their health is intricately connected to the health of their parents and other family members, mutually affecting each other’s outcomes” (Cozza, 2011, p. 1045). As such, a child growing up with parental OSI is likely to experience secondary traumatization through persistent environmental exposure to the parent’s dysregulated emotional and/or behavioural state that leads to child experiences of alienation or abandonment (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic, 2014; Boricevic Maršanic, Margetic, Zecevic, & Herceg, 2014; Dekel & Goldblatt, 2008; Dinshtein, Dekel, & Polliack, 2011; Gorman, Fitzgerald, & Blow, 2010; Herzog, Everson, & Whitworth, 2011; Pedras & Pereira, 2014; Seamone, 2012). Parental OSI can create conditions which in and of themselves can be traumatizing, and may socialize a child to somatic symptoms experienced by the parent with OSI (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic, 2014) and identify with and emulate the parental emotions (Dekel & Goldblatt, 2008; Johnson & Ling, 2013; Maholmes, 2012). This secondary traumatization has been called the “signature injury” (Seamone, 2012, p. 224) to children in military families with a combat Veteran living with an OSI, and creates increased vulnerability among children to experience suboptimal development and their own mental health issues (Gorman, Fitzgerald, & Blow, 2010).

Parental OSI and child maltreatment have been associated (Campbell, Brown, & Okwara, 2011). Parental OSI can lead to increased alcohol consumption to self-medicate, along with behaviours such as aggressive driving; these parental behaviours may place combat-injured families at increased risk for injury (Arata-Maiers & Stafford, 2010; Cozza & Lieberman, 2007; Johnson & Ling, 2013). Parental distress and poor mental health, regardless of the source, leads to higher levels of emotional, behavioural, and adjustment problems in children (Chandra, Lara-Cinisomo, Jaycox, Taneilian, Burns, Ruder, & Han, 2010; Cozza, 2011; Cozza, Holmes, & Van Ost, 2013; Cozza & Lerner, 2013; Dekel & Goldblatt, 2008; Esposito-Smythers, Wolff, Lemmon, Bodzy, Swensen, & Spirito, 2011; Gorman, Fitzgerald, & Blow, 2010; Lambert, Holzer, & Hasbun, 2014; Lester, 2012; McGuinness & McGuinness, 2014). Parental OSI has been shown to create general academic and psychological functioning problems (Catani, 2010; Cozza, Haskins, & Lerner, 2013; Gorman, Fitzgerald, & Blow, 2010), including issues with a child’s affective regulation, emotional reciprocity, social interaction (Gorman, Fitzgerald, & Blow, 2010; Selimbasic, Sinanovic, & Avdibegovic, 2012), anger (Gorman, Fitzgerald, & Blow, 2010), lower performance in autobiographical and working memory tasks (Taheri, Alizadeh Nouri, Namegh, Ghasemi, Moosaviani, & Moradi, 2012), attentional issues (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic, 2014; McGuinness & McGuinness, 2014), and hyperactivity (Selimbasic, Sinanovic, & Avdibegovic, 2012).

Parental OSI symptoms have been shown to correlate strongly with children’s depressive symptoms (Schick, Morina, Klaghofer, Schnyder, & Müller, 2013; Taheri, Alizadeh Nouri, Namegh, Ghasemi, Moosaviani, & Moradi, 2012), anxiety (Cozza & Lerner, 2013; Taheri, Alizadeh Nouri, Namegh, Ghasemi, Moosaviani, & Moradi, 2012). Adolescent children of male

PTSD Veterans admitted to inpatient psychiatry experienced higher rates of suicide attempts (Boricevic Maršanic, Margetic, et al., 2014), with double the rate of reported internalizing and externalizing problems and significantly higher rates of emotional dysregulation, substance use, anger, aggression, and depression than adolescents of Veterans without PTSD (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic, 2014). If children have been exposed to family violence as either victim or witness, this can also lead to psychosomatic disorders, anxiety, sleep disruption, excessive crying, and school problems (Gorman, Fitzgerald, & Blow, 2010).

The invisibility of OSIs makes it quite problematic for children and youth to make sense of inconsistent, potentially erratic responses and avoidant or detached parenting styles. Children may internalize these experiences and blame themselves for the parent's behavioural outbursts or emotional state (Cozza, Holmes, & Van Ost, 2013; Cozza & Lieberman, 2007; Gorman, Fitzgerald, & Blow, 2010; Harrison, Albanese, & Berman, 2014; Holmes, Rauch, & Cozza, 2013; Lester & Flake, 2013). Some sources suggest that younger children may be most vulnerable to the impacts of parental OSI as they are most dependent on parents for basic care (Cozza & Lieberman, 2007; Holmes, Rauch, & Cozza, 2013; Lieberman & Horn, 2013). The psychological distress children experience as a result of parental OSI can persist into adulthood and negatively impact intimate relationships (Dinshtein, Dekel, & Polliack, 2011).

Gorman summarizes this complex interplay of vulnerability: "When parental combat injury alters the parent's attunement to the child's needs, the child's emotional, social, and physical development suffers. If developmental issues are not attended to, the child is at risk for disorganized attachment, psychological distress, the inability to regulate emotions, behavior problems, developmental delays, and poorer health and well-being. Cumulative risk during developmental years is a significant public health concern" (Gorman, Fitzgerald, & Blow, 2010, p. 5).

Collaboration and Innovation across Sectors

Understanding OSI within a Family Context

The literature strongly reports that an exclusive focus on the individual living with OSI is problematic (Arata-Maiers & Stafford, 2010; Brannen, Grandia, Stewart, Zahradnik, & McGrath, 2008; Catani, 2010; Cozza, Haskins, & Lerner, 2013; Dinshtein, Dekel, & Polliack, 2011; Gorman, Fitzgerald, & Blow, 2010; Holmes, Rauch, & Cozza, 2013; Kelley & Jouriles, 2011; Lester, Stein, Saltzman, Woodward, MacDermid, Milburn, & Beardslee, 2013; Lester, 2012; Park, 2011; Smith-Osborne & Felderhoff, 2014). It is critical that the focus shift towards a family-centred service delivery system (Cohen, Zerach, & Solomon, 2011; Cozza, 2011; Cozza, Holmes, & Van Ost, 2013; Danish & Antonides, 2013; Dinshtein, Dekel, & Polliack, 2011; Gorman, Fitzgerald, & Blow, 2010; Lambert, Holzer, & Hasbun, 2014; Lester, Peterson, Reeves, Knauss, Glover, Mogil, & Beardslee, 2010; McFarlane, 2009; Walsh, Dayton, Erwin, Muzik, Busuito, & Rosenblum, 2014) that can provide parallel services to individuals, spouses, couples, and children (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic, 2014; Boricevic Maršanic, Margetic, Zecevic, & Herceg, 2014; Cozza, 2011; Esposito-Smythers, Wolff, Lemmon, Bodzy, Swenson, & Spirito, 2011; Guzman, 2014; Holmes, Rauch, & Cozza, 2013;

Pearrow & Cosgrove, 2009; Pedras & Pereira, 2014; Sammons & Batten, 2008). No singular strategy for addressing the needs is recommended, but rather a spectrum of services with a variety of access and interface options (Cozza, Haskins, & Lerner, 2013; Dinshtein, Dekel, & Polliack, 2011; Kudler & Porter, 2013; Smith-Osborne & Felderhoff, 2014). For example, use of peer support for youth has been identified as a preferred service delivery feature (Esposito-Smythers, Wolff, Lemmon, Bodzy, Swenson, & Spirito, 2011; Guzman, 2014; Harrison, Albanese, & Berman, 2014; Pearrow & Cosgrove, 2009).

Creating Caring Communities

Collaboration across military and civilians in education, communities, businesses, philanthropic organizations, faith-based institutions, and government is necessary to provide the response and support military families need (Buehrle, 2014; Campbell, Brown & Okwara, 2011; Cozza, 2011; Cozza, Haskins, & Lerner, 2013; Gorman, Fitzgerald, & Blow, 2010; Harrison, Albanese, & Berman, 2014; Kudler & Porter, 2013; Lester & Flake, 2013; Lester, 2012; Schick, Morina, Klaghofer, Schnyder, & Muller, 2013), especially when transitions occur (Campbell, Brown, & Okwara, 2011; Cozza, 2011). Kudler succinctly describes the ideal: “we must go beyond clinical models that focus on military children as individuals and develop a public health approach that harnesses the strengths of the communities that surround them. In short, we must build communities of care” (Kudler & Porter, 2013, p. 163). Such communities of care are ideally positioned to promote health and wellness through universal prevention programs (Cozza, Haskins, & Lerner, 2013) that may destigmatize and mitigate barriers to accessing mental health services (Campbell, Brown, & Okwara, 2011; Gewirtz, McMorris, Hanson, & Davis, 2014) while focusing prevention efforts that target higher-risk, more vulnerable families (Danish & Antonides, 2013; Lester & Flake, 2013; Lester, 2012; Lincoln & Sweeten, 2011; Ray & Heaslip, 2011).

Building Public and Professional Awareness

In Canada, only 21 of almost 660 articles related to PTSD mention familial impacts, with virtually no awareness of any secondary traumatization; based on available media reports, the general public has not had access to a comprehensive understanding of life living with an OSI or its impact on the family (Brannen, Grandia, Stewart, Zahradnik, & McGrath, 2008). The limitations to public awareness extend to professional groups who work directly with military and Veteran families such as educators and health care providers. These professional groups have limited experience with military, Veteran, and family health issues and need access to evidence-based professional development created through civilian and military collaboration (Campbell, Brown, & Okwara, 2011; Cozza, 2011; Danish & Antonides, 2013; Guzman, 2014; Johnson & Ling, 2013; Kudler & Porter, 2013; Lester & Flake, 2013; Milburn & Lightfoot, 2013), which includes awareness of military culture and structures (Campbell, Brown, & Okwara, 2011; Cozza, Haskins, & Lerner, 2013; Kudler & Porter, 2013; Lemmon & Stafford, 2014; Ray & Heaslip, 2011; Seamone, 2012). It is recommended that awareness of military service connected to the family be part of clinical assessment, for all patients/clients, and that the

unique vulnerabilities and requirements be recognized (Cozza, 2011). Given the familial context in which parental OSI needs to be addressed, screening tools for children and parents should be incorporated into health settings, such that parents are screened for need when their children present for service, and vice versa (Cozza, 2011; Schick, Morina, Klaghofer, Schnyder, & Muller, 2013). In like manner, schools should be routinely determining the military connectedness of new students, along with child protection agencies, the courts, and law enforcement (Kudler & Porter, 2013; Lester & Flake, 2013).

Using Technology to Promote Service Access

To mitigate the geographical barriers to service access as well as the stigma associated with seeking mental health services, exploration of telehealth options is recommended (Brannen, Grandia, Stewart, Zahradnik, & McGrath, 2008; Danish & Antonides, 2013). Such technologies may also create opportunities for the families of Reservists to access prevention, support, and intervention services (Cozza, Haskins, & Lerner, 2013; Guzman, 2014) as “military life extends beyond military installations” (Cozza, Haskins, & Lerner, 2013, p. 9). The use of social media can create opportunities for connection within and across family units (Milburn & Lightfoot, 2013).

Evidence Summary

Strong	Developing	Emerging
	Parental OSI and caregiver mental health impact many aspects of child development	A family approach to assessment and intervention may be optimal
		Public and professionals who interact with children in military families would benefit from professional development opportunities on the particular vulnerabilities associated with this population-
		Technology may create opportunities for engagement in prevention, support, and intervention services.

Future Research Directions

Most of the research on children and youth in military families has historically focused on deployment, with little attention thus far on the impact of parental OSI. Cozza, Haskins, and

Lerner advise that “Though deployment distress may decrease as the wars wind down, military parents’ combat-related illnesses and injuries will continue to affect their families and children. Programs designed to help those who are the most risk or are showing symptoms of distress or dysfunction are at varying stages of development, and they require further refinement and scientific study to better understand which ones are likely to be most effective, and in which circumstances” (2013, p. 4). Indeed, there is a paucity of international research to inform programming, interventions, and policy, and within the extant research there is little methodological rigour (Campbell, Brown, & Okwara, 2011; Catani, 2010; Cederbaum, et al., 2014; Chandra & London, 2013; Cozza, 2011; Cozza, Haskins, & Lerner, 2013; Cozza & Lerner, 2013; Lester & Flake, 2013; McFarlane, 2009; Milburn & Lightfoot, 2013; Park, 2011; Ray & Heaslip, 2011; Sherman, 2014). There is even less research available that reflects the Canadian healthcare service delivery system and the need for families to navigate a provincial, civilian system.

The evidence base that informs current programming for families is scarce (Cozza & Lerner, 2013; Guzman, 2014; Kudler & Porter, 2013; Park, 2011; Ray & Heaslip, 2011). Evaluation of programs needs to examine their efficacy; satisfaction with the service provided is not a valid indicator of program effectiveness (Esposito-Smythers, Wolff, Lemmon, Bodzy, Swenson, & Spirito, 2011; Guzman, 2014). Programs have emerged out of good intentions to provide for military families; as Kudler phrased it, they “seem like the right thing to do”. However, good intentions do not provide evidence of program efficacy (Kudler & Porter, 2013, p. 163; Park, 2011). For example, the extent to which peer OSI support programs or couples-based interventions are effective needs to be carefully examined (Canadian Agency for Drugs Technologies in Health, 2012). Rigorous program evaluation is critical to ensure a solid foundation of effective interventions for this population (Gorman, Fitzgerald, & Blow, 2010; Lester, 2012). Programs need to address prevention and reduction of problematic issues, while recognizing and promoting assets and strengths (Boricevic Maršanic, Margetic, Zecevic, & Herceg, 2014; Cozza, Haskins, & Lerner, 2013; Cozza & Lerner, 2013; Gorman, Fitzgerald, & Blow, 2010; Park, 2011) and facilitating posttraumatic growth and transformation (Sammons & Batten, 2008).

Understanding the impact of parental OSI across childhood in terms of age, gender, school functioning, duration of exposure to parental OSI, military branch, caregiver mental health, resilience, and vulnerability to mental health issues, among others, requires longitudinal developmental cohort research (Boricevic Maršanic, Aukst Margetic, Jukic, Matko, & Grgic, 2014; Boricevic Maršanic, Margetic, Zecevic, & Herceg, 2014; A. Chandra, Burns, Tanielian, Jaycox, & Scott, 2008; Cozza, 2011; Cozza, Haskins, & Lerner, 2013; Cozza, Holmes, & Van Ost, 2013; Cozza & Lerner, 2013; Gorman, Fitzgerald, & Blow, 2010; Lambert, Holzer, & Hasbun, 2014; Lester & Flake, 2013; Milburn & Lightfoot, 2013; Pedras & Pereira, 2014; Ray & Heaslip, 2011; Schick, Morina, Klaghofer, Schnyder, & Muller, 2013; Seamone, 2012; Walsh, Dayton, Erwin, Muzik, Busuito, & Rosenblum, 2014). Research is needed to establish if Veterans with children at home are more likely to receive a diagnoses of PTSD because of family support to seek treatment (Seamone, 2012), and if there is higher incidence among Veterans with children (Janke-Stedronsky, Greenawalt, Stock, Tsan, MacCarthy, MacCarthy, &

Copeland, 2015). Furthermore, the transition of a child from an active service member to a Veteran has yet to be studied (Sherman, 2014), and potential mechanisms of trauma transmission and resiliency need to be clearly defined (Dekel & Goldblatt, 2008; Herzog, Everson, & Whitworth, 2011; Lester, Stein, Saltzman, Woodward, MacDermid, Milburn & Beardslee, 2013; Pedras & Pereira, 2014; Smith-Osborne & Felderhoff, 2014).

A range of perspectives is required, including self-reports from older children and adolescents (Chandra, Lara-Cinisomo, Jaycox, Taneilian, Burns, Ruder, & Han, 2010; Esposito-Smythers, Wolff, Lemmon, Bodzy, Swenson, & Spirito, 2011; Milburn & Lightfoot, 2013; Park, 2011; Ternus, 2010). To capture those reports, measurement tools need to be either developed or adapted and validated to ensure that they are specific to this population (Chandra & London, 2013; Lester & Flake, 2013).

Data infrastructure expansion options need to be explored for future research, including expanding data collection and how national survey and administrative data can be made useful and available to researchers working with military families. Researchers have had limited access to this population, which problematizes the development of the field (Chandra & London, 2013; Lester & Flake, 2013; Maholmes, 2012).

Strategic knowledge translation activities are also required. Once the programmatic evidence base has grown sufficiently, coordinated dissemination strategies must be employed for programs to go to scale across regions (Guzman, 2014; Park, 2011). The current gap “between scholarly evidence and popular reports exemplifies the importance of better knowledge exchange between researchers and the media” (Brannen, Grandia, Stewart, Zahradnik, & McGrath, 2008, p. 89). As such, a multi-faceted approach to knowledge translation is needed that encompasses tailored approaches to different user groups, including the families, health care professionals, educators, policy makers, and researchers.

Chapter 5: Environmental Scan

An environment scan is a clearly defined process of information collecting and analysis which involves “internal communication of external information about issues that may influence... decision-making process” (Albright, 2004, p. 40). Its purpose is to gather information such as events, trends, emerging issues and situations to identify gaps and inform decisions moving forward (Albright, 2004). In general, the process involves several distinct but overlapping steps. At the outset, the degree to which participants will be involved and the time and resources available for allocation are determined. From there, a list of questions, along with selected sources, is prepared to ensure that scanning activities are targeted and effective. Sources external to the organization conducting the environmental scan can include: personal contacts, journals/magazines, books, newspapers, radio, television, Internet, and databases. Sources internal to the organization may include: personal contacts, internal reports, internal memoranda and internal databases. After information is collected, it is analyzed for issues and trends. This is an iterative process, as gaps in the information or new questions may arise during information gathering. The analyzed information is then translated into a format consistent with the purpose of the specific environmental scan. Ultimately, the information created from the environmental scan can then be used to support decision making (Albright, 2004).

Depending on the scope and objective of the task at hand, there are various types of environmental scans. Daft and Weick (1984) describe two assumptions that must be made prior to the scanning process, which will inform how it is conducted. First, environmental analyzability is determined by asking whether or not what is happening in the environment can be understood. Second, the issue of organizational intrusiveness is determined. This is how much the external environment is accessed during the scanning process. Depending on these assumptions, one of four distinct approaches is used for scanning: undirected viewing, conditioned viewing, enacting and searching (Daft & Weick, 1984).

Given the goal of identifying programs and services that provide families with support when experiencing life with a Veteran member with an OSI, the conditioned viewing approach was taken. Conditioned viewing is based on the assumption that the environment can be analyzed and uses a passive approach to information gathering. Information seeking during conditioned viewing focuses on a small number of well-defined sources. These sources are seen as highly respected and widely available (Choo, 2001). This approach was chosen as it is representative of the manner in which many Veteran family members would search for programs and services to give them support when a family member has an OSI. Therefore, the Internet was the source for information as it met the conditioned viewed criteria and provides a solid basis of information that is publicly available and accessible.

Methods

The list of Canadian sources was compiled from within the research team and a scan of social media sites such as Facebook and Twitter and included terms: Canada, military, Veteran and family, OSIs and PTSD. Once a list of organizations was compiled, the website for each was reviewed for pertinent programs and services.

For international programs and services, Google search engine was used and included a combination of the following: military, Veterans, families, mental health support, programs, operational stress injuries, PTSD and combat injuries. Each search was prefaced with the name of the country of interest.

Initially, each website was scanned for health and wellness programs or services for families, which included partners, children and youth. This information was captured in separate Word documents which were then later subjected to manual review for programs and services meeting the inclusion criteria. Most websites would reference other Internet sources, which were also included in the manual review. Once eligible programs and services were identified, any additional information was sought by further review of the program or service's website.

In addition, literature reviewed for earlier chapters of this report, were also included in the environmental scan if programs or services were discussed. This literature was also subjected to the same inclusion and exclusion criteria set out for the Internet sources.

Inclusion Criteria

The environmental scan focused on the identification of existing and emerging programs and services in Canada and internationally, which included the United States, the United Kingdom, Australia and New Zealand. These specific international countries were included because of similarities to Canada in regards to the health care system, socio-economic climate, and national and international geo-political positions. In addition, these countries were involved in comparable combat and peacekeeping missions since the 1990s, including conflicts in the Balkans, Iraq and Afghanistan.

The scan of national and international resources revealed a large number of programs and services addressing a range of issues impacting the lives of military members, Veterans and their families. However, given the scope of this current environmental scan, only programs and services indicating the impact of an OSI on family members were included.

Exclusion Criteria

Omitted from the environmental scan were programs and services that supported only Veterans and/ or active members experiencing OSIs, excluding participation or involvement of family members. Many of the reviewed programs and services cover a range of topics reflecting the daily life challenges of Veterans and their families; excluded from the analysis were any programs or services that did not clearly indicate that support or education was going to be provided about OSIs.

Analysis

As suggested by Albright (2004), once information has been gathered through an environmental scan, it should then be analyzed for “issues and trends that may influence the organization” (p. 42). For this environmental scan, after programs and services were identified for analysis based on the inclusion and exclusion criteria, the following information was extracted:

- Name of the program/service
- Country of origin/language of program/service

- Date of inception
- Organization responsible for the program/service
- Delivery method of program/ service (i.e., in-person, on-line, etc.)
- Type of program (i.e., peer-to-peer, educational, therapeutic, etc.)
- Length of program/ service, if time limited
- Focus of the program/service
- Target audience for the program/ service (and age range, if appropriate)
- Supporting literature (i.e., website reference, source of information)

Results

Through the internally compiled list of organizations, social media search and general search on the Internet, 250 unique websites were identified and visited which included 95 from Canada, 62 from the United States, 51 from the United Kingdom, 33 from Australia and 9 from New Zealand. During the scanning process, a total of 28 journal articles were reviewed for pertinent programs and services and included none from Canada, the United Kingdom and New Zealand. There were 27 journal articles based in the United States and 1 from Australia that were reviewed. Once each website and journal article was thoroughly scanned, only those that met the inclusion criteria were included for further analysis. The bulk of the programs and services that addressed OSIs, or more commonly identified in international sources as PTSD or combat stress, were for active military members or Veterans. The programs and services that were aimed at supporting partners, children and youth, tended to address the daily stressors affecting all military family lives such as deployment and relocation.

Approximately half (n=30) of the programs and services included in the analysis were individual or support groups and included peer support members, family peer supports, counsellors or supports from other families in similar situations. The focus of these services is to provide kinship; however, these programs and services may also include an educational or support strategy component. The second largest type of programs included in the analysis was educational in nature (n=13). These programs and services provided Veterans and family members with information about OSI, how it impacts members of the family, and strategies for support.

Also of note is how programs and services are provided to Veterans and their families. Of those included in the analysis, 46 programs or services (70%) were provided in-person or had a component of the program or service delivered in person. This identifies the potential challenge of reaching Veterans and families who are unable to physically access in-person resources. With changes in technology, many supports are being made available on-line or through mobile applications. It appears that the United States and the United Kingdom have emerged as innovators in this mode of service delivery as they provided 13 of the 19 programs or services to this analysis which indicated an on-line component for support. From the scan, it appears that Canada and Australia are in the early stages of expanding program and service delivery to utilize existing technology.

Most of the programs and services (n=53) indicate that their target audience is the families of affected Veterans; however, further investigation reveals that supports are for the adult partners or adult family members. Only 11 programs were identified that are specifically for children

(n=9) and youth (n=3) and are all located in Canada. There was 1 program in the United Kingdom that stated that it was a program for siblings of a military member who has been wounded, injured or sick. The distribution of the program participants is not dissimilar to the results indicated in the scoping review completed in the earlier part of this document (See Appendix C Program Summaries).

Table 7. Number of sources searched by country

Country	Unique Websites Accessed (n=250)	Journal Articles Reviewed (n=28)	Programs or Services Included (n=66)
Canada	95	0	19
United States	62	27	24
United Kingdom	51	0	15
Australia	33	1	8
New Zealand	9	0	0

Overview of Canadian Programs and Services

For the Canadian environmental scan, 52 Military Family Resource Centres websites (www.familyforce.ca) and 33 Family Navigator websites (www.familynavigator.ca) were reviewed. In addition, another 10 websites which provide mental health supports to Veterans and their families were reviewed. These included: Family Association for Mental Health, Caregiver Brigade, Trauma Healing Centres, Royal Ottawa Mental Health Centre, VETS Canada, Veterans Transition Network, Phoenix Centre for Children and Families, Operational Stress Injury Social Support (OSISS), Vanier Institute, and Wounded Warriors Canada.

Of the 19 Canadian programs and services included in the scan, 17 are provided in-person in the form of support groups, educational groups, single session speakers and peer support networks. One resource, based entirely on the Internet, entitled “The Mind’s the Matter”, a webinar series for youth and one mobile app, “OSI Mobile App”, were identified. Half of the programs and services (n=9) are for children and youth and are distributed among 4 different MFRCs across the country. Most of the programs and services (n=17) in the analysis are supported by government-affiliated organizations such as MFRCs or the Department of Defence and Veterans Affairs Canada.

The Military Family Services (MFS) is responsible for the management of the Military Family Services Program (MFSP) on behalf of the Department of National Defence and the Canadian Armed Forces. It is the MFS that provides the Military Family Resource Centres (MFRCs) with resources, professional advice and technical guidance. The MFRCs have been a support to Canadian Armed Forces (CAF) families since the early 1990s. They were created to provide military families with information, resources and services for members and families living within Canadian Armed Forces communities. The Canadian Forces Family Covenant articulates the commitment to families and serves as a basis to continue to support military family services. The Covenant states:

We recognize the important role families play in enabling the operational effectiveness of the Canadian Forces and we acknowledge the unique nature

of military life. We honor the inherent resilience of families and we pay tribute to the sacrifices of families made in support of Canada. We pledge to work in partnership with families and the communities in which they live. We commit to enhancing military life. (“About Military Family Services”, n.d.).

There is an independently-operated MFRC located on each CAF base across the country and internationally. Issues such as deployment, departures, reunions and relocations are supported directly by the MFRC or through partnerships within the community. Recognizing that there are unique health and wellness issues faced by military families, workshops, support groups and counselling services are offered to members and their families. Based on information available through their websites, a thorough review of the programs and services offered through each MFRC was conducted, as this is most likely the first point of contact. In general, the emphasis within MFRC programming is to enrich the lives of individuals and families in CAF communities by providing programs and services to support their daily lives. Because most of the programs and services are geared towards supporting the typical daily challenges faced by most families, many of the programs and services were eligible for inclusion in the analysis,

MFRC Edmonton, MFRC Montreal and MFRC Shilo offer the “Individual Success Through Empowering Peers” (iSTEP) program. This is a support group program for children ranging in age from 6 to 12 years who have a parent experiencing an OSI. Topics covered in this program include understanding invisible injuries, expressing feelings, exploring anger, being unique, dealing with difficult feelings, and developing coping strategies.

For youth, a similar program entitled “Youth of Parents who have Experienced Trauma” (YPET) is also offered at MFRC Montreal and MFRC Shilo. This group provides youth with information and support in understanding OSIs experienced by their parents. In addition, it provides youth with strategies to support their parents and encourages the development of networks within the community. This program includes a parental component which provides education and supports to parents as their child participates in YPET.

“Ensemble pour Mieux Comprendre” (Together to Better Understand) (E=MC³) is a family-centred program offered at MFRC Valcartier aimed at providing support to younger children, ages 4-6 years old and older children, ages 7-12 years old. This program provides education and support for children whose parents are experiencing an OSI.

“OSI and Mental Health Caregiver” is offered at MFRC Edmonton which is an evening session aimed at supporting caregivers. This informational seminar covers topics such as caregiver burnout, community and CAF resources, treatment methods, medication and the impacts of OSI on family and children.

Similarly, MFRC McChord and MFRC Tinker offer a speaker’s series entitled “Mental Health and Operational Stress Injury”. This provides formal mental health and OSI education to CAF members and their families. The goal of the speaker’s series is to increase mental health awareness as well as provide tools to assist affected family members and peers.

The Royal Ottawa Mental Health Centre and the Military Family Support Program collaborated to create an innovative resource for adolescents. “The Mind’s the Matter” is a 10 episode webinar series created for youth of CAF and Veteran parents experiencing an OSI. It provides youth with support and education for their unique situation.

The Royal Ottawa Mental Health Centre was also involved in the creation of the OSI Connect Mobile App. The OSI Connect Mobile App is a portable means of providing learning and self-management techniques. It also includes a tab that provides information for family members. Although this is not a specific program, this app is a resource that families can use to obtain more intensive support.

Wounded Warriors Canada have started their pilot of a weekend retreat for Veteran couples who are experiencing the effects of OSI through its “Couples Overcoming PTSD Everyday” (COPE) program. This program came about from the life experiences of LtCol (retired) Chris Linford. During his recovery, he recognized the impact his injury had on his relationship with his family. This appears to be one of the first philanthropic efforts to support partners experiencing OSI of a military family member.

The information available on the websites for each of the abovementioned programs did not indicate which, if any, were grounded in evidence. The evolution of the “Ensemble pour Mieux Comprendre” (Together to Better Understand) (E=MC³) program was outlined in a PowerPoint presentation available through the CF Morale & Welfare Services (www.cfmws.com). It provided a timeline for pilot testing and implementation as well as results of the program, however, the results provided were qualitative and lacked any rigor. No other similar information about Canadian program and services was made available.

Overview of International Programs and Services

Most of the international programs and services included in the scan are provided by non-governmental organizations (n=31). There are differences between the international countries in which organizations provide the programs and services. In the United States, half (n=12) are supported by the Department of Veterans Affairs or medical affiliates such as Veterans Affairs Medical Centers. Australian programs and services share similarity with the United States in which organizations provide support (n=4). In contrast, in the United Kingdom, programs and services in the analysis are all supported by charities.

International programs and services are mostly provided in-person (n=30), in part, or, as a whole. The other program/ service delivery methods are a mix of on-line, telephone, mobile apps and mobile texting. All international programs provide a mixture of supports including peer support networks, individual counselling and group educational and support groups. All of the international programs and services are described as being for families, with the exception of “Military Families Near and Far” from the United States, which has been created specifically for children from military families.

The provision of health care to Veterans in the United States is overseen by the Veterans Health Administration (VHA), a division within the United States Department of Veterans Affairs (“U.S. Department of Veterans Affairs”, n.d.). Because health care to Veterans is provided

differently in the US, this has also influenced how mental health support services to families are provided.

The Department of Veterans Affairs is identified as instrumental in supporting various programs created for families of Veterans. A variety of delivery methods are used including in-person groups such as “Group for Veterans with Traumatic Brain Injury”, couples weekend retreats such as “Operation Restoration”, telephone support such as “Coaching into Care” and on-line services such as “Building Better Caregivers”.

Non-governmental organizations such as the National Alliance on Mental Illness and the Massachusetts-based Home Base Family Support Team have created educational and support programs for Veterans, their partners and children.

A website entitled “Military Families Near and Far” (www.familiesnearandfar.org/resources/) was created by Sesame Street and the Electric Company in cooperation with the Defense Centers of Excellence. It provides on-line resources for parents and their children to support experiences unique to military life including relocation, homecomings, deployment and physical and mental injuries due to service. The website has created videos for children using familiar characters to help explain “The New Normal” after the diagnosis of an OSI.

Clearinghouse for Military Family Readiness (www.militaryfamilies.psu.edu) is a database containing approximately 890 programs that have been reviewed for overall effectiveness based on research literature. In addition, this website provides resources and strategies for families. The Clearinghouse continually solicits submissions for new programs to be added. Each program is also reviewed for changes every two years. This resource provides families with an easy way to find a program and service which meets their needs as well as evidence of their effectiveness.

From the Clearinghouse, 5 programs were identified that met the criteria for analysis. The program “Active Military Life and Resiliency Skills” had preliminary evaluation however, it was difficult to conclude that positive changes were the result of program participants as there was no comparison group included in the study. Evaluations were completed of the “After Deployment: Adaptive Parting Tools (ADAPT)” program, however, they did not meet the Clearinghouse’s evaluation criteria. There was one pre-/post- test evaluation for “Families OverComing Under Stress (FOCUS)” that was identified however, the study lacked methodological rigor. No peer review evaluations were located for the “PAIRS Retreat” program. A randomized control trial was completed of the “Kognito Family of Heroes” program which yielded significant positive results. Based on the current research, the Clearinghouse determined that effectiveness of these programs continue to be unclear, however, the study did indicate that moving the “Kognito Family of Heros” program to Promising category on the Clearinghouse Continuum of Evidence would require demonstration of positive effects lasting at least one year from the beginning of the program or at least six months from program completion (“Clearinghouse Fact Sheet: Kognito Family of Heroes”, 2013).

In the United Kingdom, a number of non-governmental, charitable organizations have been identified as resources for Veterans and their families such as The Ripple Pond, Combat Stress, Big White Wall and Blue Apple Heroes Charity. Unique to many of these British organizations

is the varied methods which these services can be accessed, including in-person, telephone, text, email or social media sites like Facebook. Also notable is the nature of the support provided. Many of the services are peer-to-peer and supportive in nature, rather than structured programs such as those identified in the Canadian and American environmental scans. The Soldiers, Sailors, Airmen and Families Association (SSAFA) provide a range of services including a unique in-person/on-line support group for siblings of injured service personnel. Similar to the information available on Canadian websites, there were no information about these British programs indicating evidence for effectiveness.

Notable in the environmental scan of Australian programs and services is the varied methods in which Veterans and their families can access resources. “Seeing it from Both Sides” offers peer support and education to armed services members, Veterans and their families experiencing PTSD through on-line discussion and Facebook. “OnTrack Families and Friends” offers an on-line program to families of friends of those experiencing a mental illness. Also available for Australian Veterans and their families is “PTSD Coach Australia”, a mobile app created by the Department of Veterans Affairs to learn about and manage symptoms that commonly occur after trauma. Although there does not appear to have a family education component linked with this mobile app, there is guide for clinician that provides information on how PTSD Coach Australia can be integrated into care.

The scan of programs and services from New Zealand did not indicate anything that met inclusion criteria.

SWOT Analysis

A SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) is a commonly used tool for strategic planning (Chermack & Kasshanna, 2007). The goal of a SWOT analysis is to better understand current performance (strengths and weaknesses) while looking towards the future (opportunities and threats) by accounting for factors that exist in the external environment (Chermack & Kasshanna, 2007). For the purpose of this report, the SWOT analysis uses data extracted from the scan and presented in the Canadian context for the purposes of future planning.

Strengths

1. Canadian organizations are providing a wide range of programs and services to Veteran families including crisis support, peer support, psychoeducation, and counseling services. These programs and services are supported by both governmental and non-governmental organizations
2. There are a number of MFRCs across the country providing programs to children, youth and partners experiencing life with a member with OSI.
3. Canadian organizations are demonstrating leadership in developing family-centred programs and services as new technology becomes available. Examples include the OSI mobile app, “The Mind’s the Matter” webinar series for adolescents, and “Couples Overcoming PTSD Everyday” (COPE) retreat.

Weaknesses

1. The availability of OSI-focused programs and services is limited to specific geographic areas. The majority of CAF families do not have geographic access to these programs and services, with the exception of those resources that are available on-line or through mobile apps.
2. It is imperative that programs and services demonstrate clinical effectiveness. This information may exist; however, data extracted from the Canadian scan has indicated that this is not readily available. There is evidence in the literature indicating the efficacy of certain program models and approaches, however, this information is not readily available to CAF families.
3. Most programs and services supporting families are being provided in conjunction with other issues impacting military families. Literature has indicated the significant impact OSI has on Veterans' families, which suggests a need for specialized programming.

Opportunities

1. Local Collaboration: There are organizations within Canada that provide specialized mental health care for children and youth and are ideally positioned to support the creation and provision of programs and services to this specific population.
2. Technology: Technology can provide cost-effective and far-reaching programs and services through social media, SMS and the Internet. Canadian organizations can leverage the existing on-line experience built by peer countries.
3. International Exemplars: Other countries have been developing their programming for families in different formats, and they provide us potential exemplars from which to learn.

Threats

1. Given the impact OSIs have on family members and the limited resources to address those impacts, it is important that programs and services demonstrate clinical effectiveness.
2. The extent to which programs and services are evidence-based is not clearly documented.

Chapter 6: Conclusion

The Ombudsman's Special Report, *On the Homefront: Assessing the Well-being of Canada's Military Families in the New Millennium* (2013), underscores the mobility, separation, and risk that broadly impact military families. The "relentless upheaval of military life" disrupts and strains military families (p. 4), presenting challenges for the stability and functioning of military families. These challenges are further complicated by barriers to health care access and continuity. Given these ongoing circumstances facing military families, when a military service member or Veteran experiences an OSI, the impacts on the mental health and well-being of the family need to be better understood. Research on historic conflicts has suggested that the presence of an OSI is correlated with significantly higher rates of mental health problems in spouses and children when compared to those in military families with no OSI and civilian families. While there has been increasing attention in Canadian society on OSIs and those who have served in CAF, there has been much less focus on the impact OSI has had on children and spouses in military families and on family life and functioning more broadly (Brannen, Grandia, Stewart, Zahradnik, & McGrath, 2008). This study took a two-phased approach—a series of scoping reviews and an environmental scan of family programming, with an emphasis on the Canadian perspective—to explore how OSIs impact mental health and well-being of Veterans' families.

The first phase of the approach involved a broad and comprehensive scoping study to understand the nature and breadth of the scholarly literature, teasing apart the narratives focusing on the family broadly, as well as spouses/caregivers and children and youth specifically. While the vast majority of the sources across all areas draw from the United States, the body of knowledge focused on the spouses is by far the most mature, with the child and youth literature the most recently emerging. There has been a significant surge in published sources across all 3 areas in the past 5 years. Of particular note, a tiny fraction of it is Canadian (Spouse (4) + Family (1) + Child (5) = 10 Canadian - only 10 of 256 combined sources were Canadian. There were multiple areas of consistency across all 3 scoping reviews.

There is clear and growing evidence for the negative impacts of OSI—primarily PTSD—on the dynamics and relationships within the family and with spouses, caregivers, children and youth. When families include a Veteran living with an OSI, family members experience more emotional, psychological, behavioural, social, academic problems, and are also more vulnerable to experiences of neglect or abuse than other families. The literature regards this as secondary trauma, associating mental health issues in family members with a service member's OSI.

Key Points:

- Building on the historical research that suggests a unidirectional relation between PTSD and negative impacts on family members, this analysis revealed that there is instead a complex and potentially bidirectional set of mechanisms and factors at play across parental OSI, spousal mental health, and child and youth developmental issues that may, on the one hand, exacerbate difficulties, and, on the other hand, increase the likelihood of treatment seeking.

Factors such as adverse childhood events, coping strategies, communication styles, parenting styles, severity of OSI symptoms, socioeconomic status, and geographic access to services will need to be explored, in combination.

- It is important to develop a better understanding of the symptom severity, interactivity, and synergy among factors associated with the development of OSIs, along with contextual mediators and factors that facilitate resilience, strength, and post-traumatic growth.
- The research is skewed towards the consideration of PTSD, and inadequate consideration is given to other OSIs, including traumatic brain injury, depression, anxiety, and substance use. Comorbidity among these conditions will also need to be better understood, along with symptom severity.
- The research is also skewed towards understanding OSIs and combat Veterans who are still in service, and needs to be intentionally broadened to consider those who are released from service, young Veterans, female Veterans, and Veterans who identify as members of visible minorities.
- OSI must be understood within a family context, necessitating family-centred approaches to addressing OSI. These range from partner involvement to focused couple therapy. While the literature suggests this orientation towards programming, there is little research evidence that can speak to its efficacy or to identification of key ingredients that impact OSI recovery. A diversity of engagement strategies, from telephone to website to retreats, for families is suggested, along with the recommendation to leverage existing and emerging technologies to ensure equitable and continuous access to the supports.
- Developing collaborations and capacity within the broader community has implications for the mental health and well-being of the military family. Families interact with civilian health care providers, educators, and faith providers, and these professional groups need professional development opportunities to ensure their competence in meeting the need of military families.
- The definition of the family used in research is not consistent with the current realities of how Canadian families are structured, potentially limiting its relevance to blended and non-traditional families. Broader, more inclusive definitions of family will inform a much wider audience of families than the traditional, heterosexual married couple with children.
- Methodologies are primarily self-report and/or correlational and can inform our understanding of associations between different factors, but not causality. A broadening of mixed methodologies and a gathering of perspectives of multiple stakeholders, including those of children and youth directly, are requisite to advance this field. Enhanced methodological approaches are urgently needed, including longitudinal studies, and randomized control trial studies.

The second phase of the study was an environmental scan of the Canadian and international programs and services targeting OSI within military-connected families. While the publicly accessible web-based program descriptions described a range of program formats and age targets and a higher preponderance of Canadian initiatives than there was research in the scoping phase, there is limited integration of evidence across the board. Rather, programs have been developed with the best of intentions to target specific issues related to OSIs and

their impacts on family mental health and well-being, and are often embedded in a broader cadre of services that may dilute the efficacy of OSI-focused intervention. Programs may be described, but higher standards of program evaluation that surpass satisfaction scores are required, along with indicators of program efficacy. Physical location has an incredible impact on a family's ability to access programs, meaning that the majority of families do not have equitable access to potentially beneficial supports. Use of technology and higher standards of evidence, as seen in the Royal Ottawa Hospital's OSI Connect mobile app, stand as beacons of possibility for this population.

Limitations

One potential limitation to this study was how the term "Veteran" is understood in the scholarly literature. Often, "Veteran" was used to communicate that a military service member had deployed to a combat situation. The time that had lapsed post-deployment at the time of the research was typically unclear. At other times, "Veteran" was used to indicate a transition out of active service into civilian status. Given the vague use of the term, especially for perspective-type articles that did not specify a particular sample, it was not always possible to distinguish research on active military personnel who were combat Veterans and those who were released from military service. As such, it was not possible to have crisp inclusion and exclusion criteria when determining if a source would inform our research question on Veteran families' mental health and well-being.

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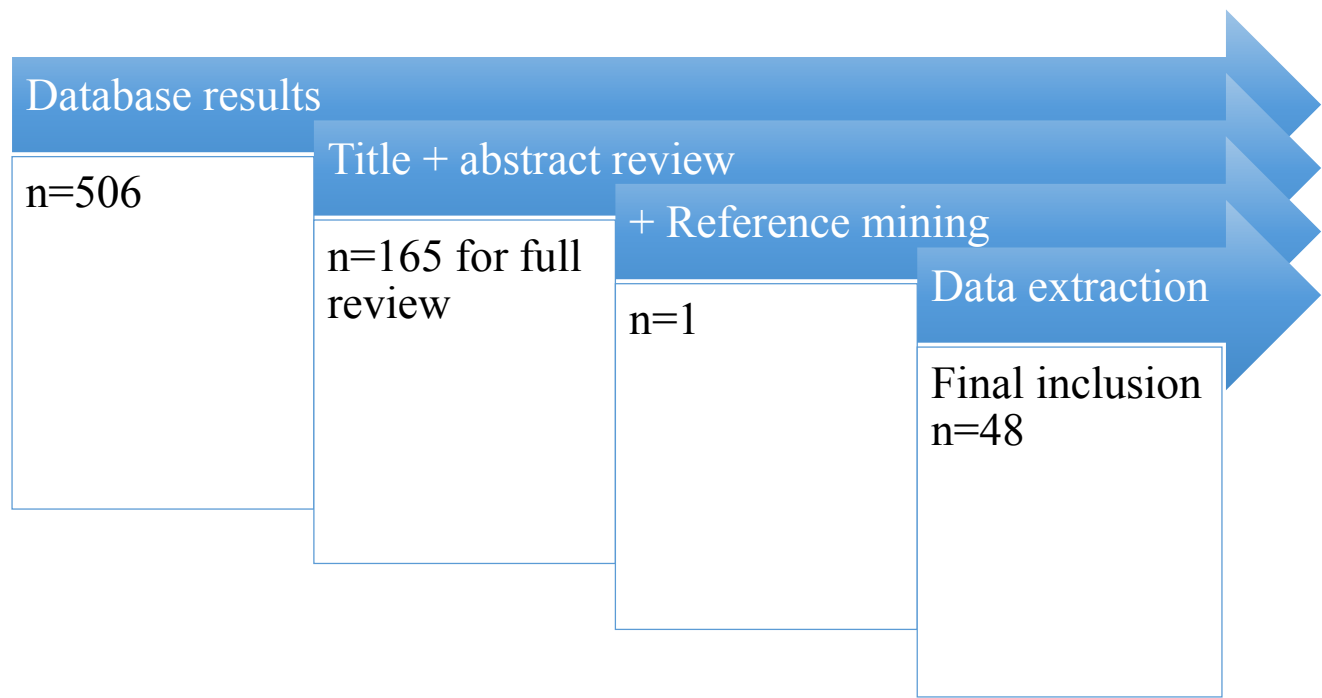
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Appendix A: Search Terms

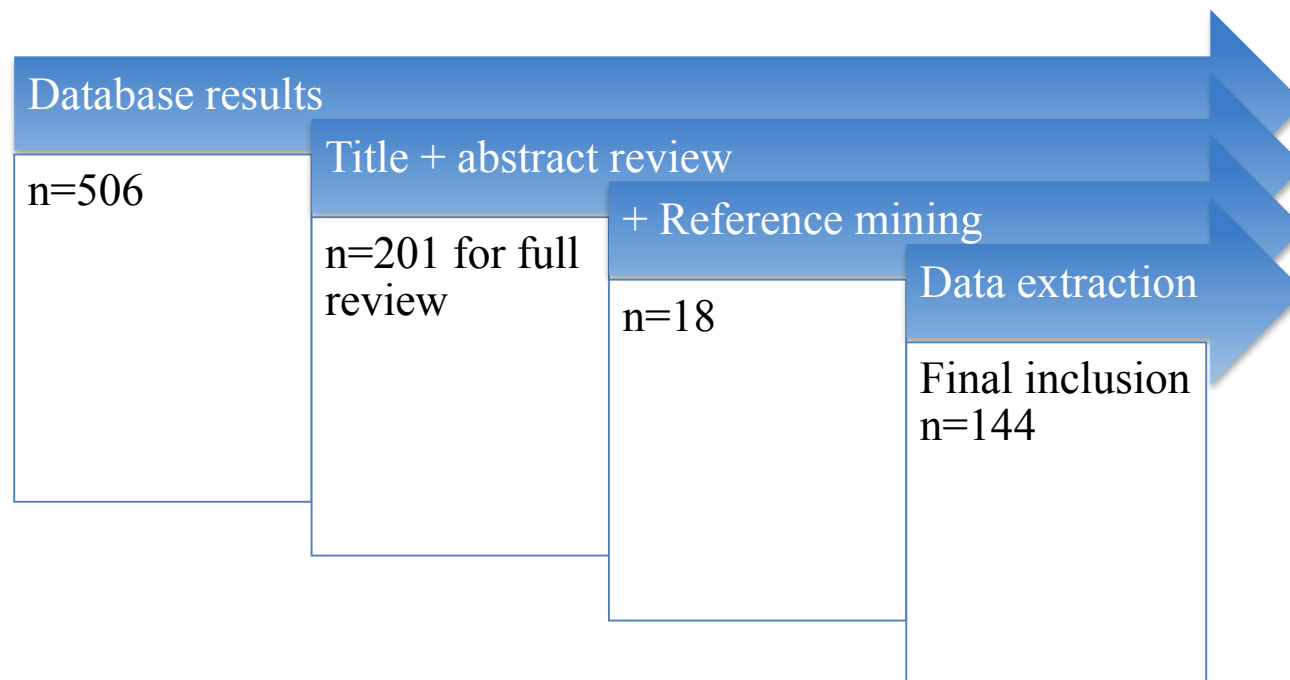
Family Descriptor Terms	Veteran Descriptor Terms	OSI Descriptor Terms		Family Mental Health Link/Impact Descriptor Terms	
spouses husbands wives couples significant others family military families child children youth adolescent dependent intimate partner military Veteran families Veteran families teenager* girl* boy*	military personnel air force personnel army personnel coast guard personnel commissioned officers enlisted military personnel marine personnel military medical personnel military psychologists national guard personnel navy personnel ROTC students volunteer military personnel combat experience military deployment military enlistment military Veterans Canadian Forces Canadian Armed Forces military reservist* military psychiatry	addiction alcoholism drug addiction internet addiction sexual addiction anxiety disorders anxiety depression major depression disabilities sleep sleep disorders hypervigilance mild traumatic brain injury mild TBI operational stress injury posttraumatic stress disorder anger hostility rage suicidal ideation drug abuse alcohol abuse	drug dependency inhalant abuse polydrug abuse drug addiction substance abuse emotional trauma combat related illness occupational stress traumatic brain injury head injuries stress reactions chronic stress injuries stress psychological stress acute stress disorder trauma distress	partner abuse intimate partner violence domestic violence emotional abuse family conflict relationship quality family relations child discipline childrearing practices marital relations parent child relations parental role sibling relations marital separation marital status marital satisfaction marital conflict marriage counselling interpersonal relationships child abuse battered child syndrome child neglect	parentification posttraumatic growth resilience risk secondary trauma trauma transmission vicarious trauma well being mental health mother child communication father child communication mother child relations father child relations child welfare child psychopathology transgenerational patterns adultification financial strain caregiver burden

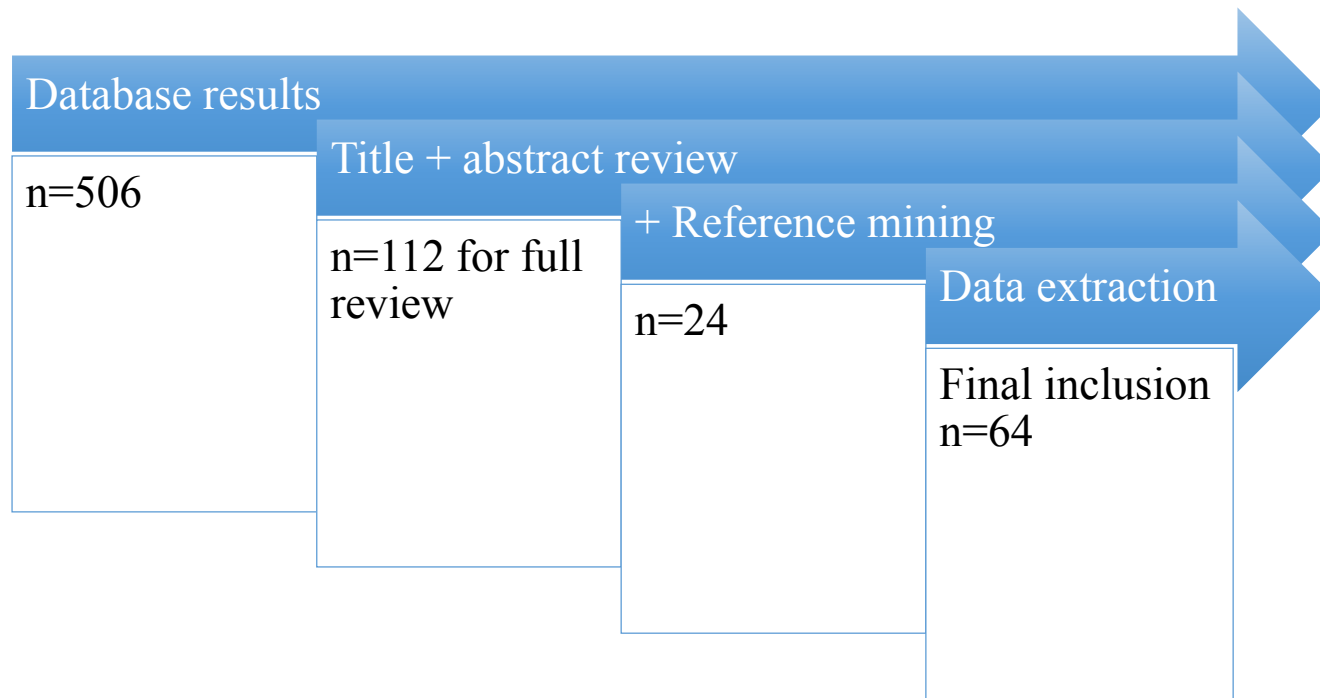
Appendix B: Search Results Flowthrough Charts:

Family Sources



Spousal Sources





Appendix C: Program Summary Charts