

Impact on families

Introduction

A diagnosis of any mental disorder can have considerable impact not only on the affected individual, but also on the people closest to them. Sometimes family members experience burden, particularly during acute phases of the illness. Burden is considered in terms of objective effects, such as illness severity or financial strain, but also in terms of subjective effects, such as the emotional impact of the illness on family members.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2010 that report results separately for people with PTSD. Reviews were identified by searching the databases MEDLINE, EMBASE, and PsycINFO. When multiple copies of reviews were found, only the most recent version was included. We prioritised reviews with pooled data for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist that describes a preferred way to present a meta-analysis¹. Reviews with less than 50% of items checked have been excluded from the library. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons, imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other

matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large or if there is a dose dependent response. We have also taken into account sample size and whether results are consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)². The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found eight systematic reviews that met our inclusion criteria³⁻¹⁰.

- Moderate to high quality evidence finds small to medium-sized associations between increased PTSD symptoms and increased interpersonal violence, poor functioning, relationship problems, and more partner psychological distress.
- High quality evidence finds a medium-sized association between increased parental PTSD symptoms and increased child psychological distress. The effect size was largest in studies with parent-child dyads who were both exposed to interpersonal trauma.
- Moderate to high quality evidence finds a medium-sized correlation between increased parental PTSD symptoms and increased child PTSD symptoms. Larger effect sizes were found for maternal vs. paternal PTSD symptoms, parent interview vs. self-report, same mode vs. different mode of assessment for parents and children, and in longitudinal vs. cross-sectional studies.
- Moderate to high quality evidence finds small associations between increased parental positive and negative behaviours and increased child PTSD symptoms. There were larger effect sizes in cross-sectional studies than in longitudinal studies, in



Impact on families

studies with more females, in studies using child vs. parent informant measures, and with exposure to group vs. individual traumas.

- Moderate to high quality evidence found a medium-sized association between increased parental PTSD symptoms and increased family difficulties (parenting problems, maladaptive family functioning, and child symptoms). Effect sizes were largest in retrospective and concurrent studies, in studies using child or veteran parent measures of child outcomes, and in studies assessing emotional problems, total symptoms, or externalising symptoms.
- Moderate quality evidence finds maternal postpartum PTSD may be associated with lower rates of breastfeeding. The evidence for an association with birth weight, preterm birth, fetal growth, or head circumference is contradictory.



Impact on families

Bakula DM, Sharkey CM, Perez MN, Espeleta HC, Gamwell KL, Baudino M, Delozier AM, Chaney JM, Matt Alderson R, Mullins LL

Featured Article: The Relationship Between Parent and Child Distress in Pediatric Cancer: A Meta-Analysis

Journal of Pediatric Psychology 2019; 44: 1121-36

[View review abstract online](#)

Comparison	Relationship between parental PTSD symptoms and child distress in families with childhood cancer.
Summary of evidence	Moderate quality evidence (large sample, direct, unable to assess consistency or precision) finds a medium-sized correlation between increased parental PTSD symptoms and increased child distress in families with a child with cancer.
Child distress	
<i>A medium-sized correlation between increased parental PTSD symptoms and child distress levels; 14 samples, N = 2,173, r = 0.31, 95%CI not reported, p < 0.001</i>	
Consistency in results[‡]	Unable to assess; no measure of consistency is reported.
Precision in results[§]	Unable to assess; no measure of precision is reported.
Directness of results	Direct

Birkley EL, Eckhardt CI, Dykstra RE

Posttraumatic Stress Disorder Symptoms, Intimate Partner Violence, and Relationship Functioning: A Meta-Analytic Review

Journal of Traumatic Stress 2016; 29: 397-405

[View review abstract online](#)

Comparison	Relationships between PTSD symptoms and intimate partner violence and relationship functioning.
Summary of evidence	Moderate to high quality evidence (large samples, inconsistent, precise, direct) finds small to medium-sized associations between increased symptoms and increased interpersonal violence, functioning, and relationship problems.

Impact on families

Interpersonal violence
<p><i>Small associations between increased interpersonal violence and increased;</i></p> <p>Total symptoms: 7 studies, N = 2,653, z = 0.16, 95%CI 0.14 to 0.17, Qp < 0.001</p> <p>Reexperiencing symptoms: 6 studies, N = 2,277, z = 0.10, 95%CI 0.06 to 0.14, Qp < 0.01</p> <p>Avoidance symptoms: 2 studies, N = 647, z = 0.10, 95%CI 0.02 to 0.17, Qp > 0.05</p> <p>Emotional numbing symptoms: 3 studies, N = 1,737, z = 0.18, 95%CI 0.13 to 0.22, Qp > 0.05</p> <p>Hyperarousal symptoms: 7 studies, N = 2,653, z = 0.20, 95%CI 0.16 to 0.24, Qp < 0.01</p> <p><i>No significant relationship between interpersonal violence and;</i></p> <p>Avoidance/numbing combined: 3 studies, N = 540, z = 0.08, 95%CI -0.01 to 0.17, Qp < 0.05</p>
Parent, child, and family functioning problems
<p><i>Small to medium-sized associations between increased functioning problems and increased;</i></p> <p>Total symptoms: 16 studies, N = 5,907, z = 0.25, 95%CI 0.23 to 0.26, Qp < 0.001</p> <p>Reexperiencing symptoms: 16 studies, N = 5,907, z = 0.17, 95%CI 0.14 to 0.19, Qp < 0.001</p> <p>Avoidance symptoms: 11 studies, N = 4,634, z = 0.28, 95%CI 0.25 to 0.31, Qp < 0.001</p> <p>Emotional numbing symptoms: 7 studies, N = 1,924, z = 0.32, 95%CI 0.27 to 0.36, Qp < 0.001</p> <p>Avoidance/numbing combined: 7 studies, N = 1,681, z = 0.31, 95%CI 0.26 to 0.36, Qp < 0.001</p> <p>Hyperarousal symptoms: 16 studies, N = 5,907, z = 0.25, 95%CI 0.22 to 0.27, Qp < 0.001</p>
Marital/partner relationship problems
<p><i>Small to medium-sized associations between increased relationship problems and increased;</i></p> <p>Total symptoms: 11 studies, N = 2,967, z = 0.31, 95%CI 0.29 to 0.32, Qp < 0.001</p> <p>Reexperiencing symptoms: 11 studies, N = 2,967, z = 0.21, 95%CI 0.17 to 0.25, Qp < 0.001</p> <p>Avoidance symptoms: 10 studies, N = 2,585, z = 0.30, 95%CI 0.26 to 0.34, Qp < 0.001</p> <p>Emotional numbing symptoms: 7 studies, N = 1,357, z = 0.47, 95%CI 0.43 to 0.53, Qp < 0.001</p> <p>Avoidance/numbing combined: 5 studies, N = 1,158, z = 0.33, 95%CI 0.27 to 0.39, Qp < 0.001</p> <p>Hyperarousal symptoms: 11 studies, N = 2,967, z = 0.29, 95%CI 0.25 to 0.32, Qp < 0.001</p> <p><i>Small to medium-sized associations between increased intimacy problems and increased;</i></p> <p>Total symptoms: 7 studies, N = 1,427, z = 0.33, 95%CI 0.31 to 0.36, Qp < 0.001</p> <p>Re-experiencing symptoms: 7 studies, N = 1,427, z = 0.25, 95%CI 0.20 to 0.30, Qp < 0.001</p> <p>Avoidance symptoms: 5 studies, N = 814, z = 0.42, 95%CI 0.35 to 0.49, Qp < 0.01</p> <p>Emotional numbing symptoms: 5 studies, N = 925, z = 0.35, 95%CI 0.28 to 0.41, Qp < 0.001</p> <p>Avoidance/numbing combined: 4 studies, N = 664, z = 0.48, 95%CI 0.41 to 0.56, Qp > 0.05</p>



Impact on families

Hyperarousal symptoms: 7 studies, N = 1,427, z = 0.25, 95%CI 0.20 to 0.30, Qp < 0.001	
Consistency in results	Mostly inconsistent
Precision in results	Precise
Directness of results	Direct

Cook N, Ayers S, Horsch A

Maternal posttraumatic stress disorder during the perinatal period and child outcomes: A systematic review

Journal of Affective Disorders 2018; 225: 18-31

[View review abstract online](#)

Comparison	Maternal postpartum PTSD and infant outcomes.
Summary of evidence	Moderate quality evidence (mostly large samples, direct, appears inconsistent, unable to assess precision) finds maternal postpartum PTSD may be associated with lower rates of breastfeeding. The evidence for an association with birth weight, preterm birth, fetal growth, or head circumference is contradictory.
Infant outcomes	
<p><i>The following studies found significant associations;</i></p> <p>2 studies (N = 912 and 839) found PTSD was associated with low birth weight.</p> <p>2 studies (N = 903 and 171) found PTSD was associated with lower rates of breastfeeding.</p> <p>1 study (N = 2,487) found PTSD was associated with higher risk of preterm birth.</p> <p>1 study (N = 1,093) found PTSD was associated with poor and excessive fetal growth.</p> <p><i>The following studies found no significant associations;</i></p> <p>1 study (N = 54) found no associations with birth weight, gestational age, or head circumference.</p> <p>1 study (N = 1,100) found no associations with birth weight, preterm delivery, or gestational age.</p> <p>1 study (N = 277) found no associations with birth weight or preterm birth.</p> <p>1 study (N = 446) found no associations with birth weight or gestational age.</p> <p>1 study (N = 101) found no association with birth weight.</p>	
Consistency in results	Appears inconsistent.
Precision in results	Unable to assess; no measure of precision is reported.

Impact on families

Directness of results	Direct
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<p><i>Kritikos TK, Comer JS, He M, Curren LC, Tompson MC</i></p> <p>Combat Experience and Posttraumatic Stress Symptoms among Military-Serving Parents: A Meta-Analytic Examination of Associated Offspring and Family Outcomes</p> <p>Journal of Abnormal Child Psychology 2019; 47: 131-48</p> <p>View review abstract online</p>	
Comparison	Impact on families of PTSD in military personnel.
Summary of evidence	Moderate to high quality evidence (large sample, inconsistent, precise, direct) found a medium-sized association between increased parental PTSD symptoms and increased family difficulties (parenting problems, maladaptive family functioning, and child symptoms). Effect sizes were larger in retrospective and concurrent studies than in longitudinal studies, in studies using child or veteran parent measures of child outcomes rather than non-deployed parents' measures, and in studies assessing emotional problems, total symptoms, or externalising symptoms.
Family difficulties	
<p><i>A medium-sized association was found between increased parental PTSD symptoms and increased family difficulties;</i></p> <p style="text-align: center;">20 studies, N = 6,211, $r = 0.29$, 95%CI 0.24 to 0.35, $p < 0.001$, $I^2 = 92\%$</p> <p>Effect sizes were larger in retrospective and concurrent studies than in longitudinal studies, in studies using child or veteran parent measures of child outcomes rather than non-deployed parents' measures, and in studies assessing emotional problems, total symptoms, or externalising symptoms.</p> <p>There were no moderating effects of family difficulties domain (parenting problems, maladaptive family functioning, and child symptoms), informant of family functioning, type of parenting outcome, PTSD symptoms vs. diagnosis, measure of PTSD, study quality, child age, service member age, or marital status.</p>	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Direct



Impact on families

Lambert JE, Engh R, Hasbun A, Holzer J

Impact of posttraumatic stress disorder on the relationship quality and psychological distress of intimate partners: a meta-analytic review

Journal of Family Psychology 2012; 26: 729-37

[View review abstract online](#)

Comparison	Relationship between PTSD symptoms and relationship problems.
Summary of evidence	Moderate to high quality evidence (large samples, inconsistent, precise, direct) finds increased PTSD symptoms were associated with more relationship problems and partner's psychological distress. Female partners and partners of military personnel were most affected.
Relationship problems	
<p><i>A small association between increased PTSD symptoms and poor relationship quality;</i> 22 studies, N = 3,421, $r = -0.24$, 95%CI -0.29 to -0.19, $p < 0.01$, $Qp < 0.01$</p> <p>Subgroup analysis found a larger effect size for military than civilian samples and a larger effect size for female partners of male trauma survivors than for male partners of female trauma survivors.</p>	
Partner psychological distress	
<p><i>A small association between increased PTSD symptoms and more partner psychological distress;</i> 25 studies, N = 3,417, $r = 0.30$, 95%CI 0.23 to 0.36, $p < 0.01$, $Qp < 0.01$</p> <p>Subgroup analysis found a larger effect size for military than civilian samples.</p>	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Direct

Lambert JE, Holzer J, Hasbun A

Association between parents' PTSD severity and children's psychological distress: a meta-analysis

Journal of Traumatic Stress 2014; 27: 9-17

Impact on families

View review abstract online	
Comparison	Relationship between parental PTSD symptoms and child psychological distress levels.
Summary of evidence	High quality evidence (large sample, consistent, precise, direct) finds a medium-sized association between increased parental PTSD symptoms and increased child psychological distress. The effect size was larger in studies with parent–child dyads who were both exposed to interpersonal trauma than for combat veterans and their children or civilian parent–child dyads who were both exposed to war.
Child psychological distress	
<p><i>A medium-sized association was found between increased parental PTSD symptoms and increased child psychological distress;</i></p> <p>42 studies, N = 24,236, $r = 0.35$, 95%CI 0.31 to 0.30, $p < 0.001$, $Q_p = 0.154$</p> <p>The effect size was larger in studies with parent-child dyads who were both exposed to interpersonal trauma than for combat veterans and their children or civilian parent-child dyads who were both exposed to war.</p> <p>There were no moderating effects of sex of parent, type of traumatic event, PTSD self-report vs. diagnostic interview, or type of child assessment administered.</p>	
Consistency in results	Consistent
Precision in results	Precise
Directness of results	Direct

<p><i>Morris A, Gabert-Quillen C, Delahanty D</i></p> <p>The association between parent PTSD/depression symptoms and child PTSD symptoms: a meta-analysis</p> <p>Journal of Pediatric Psychology 2012; 37: 1076-88</p> <p>View review abstract online</p>	
Comparison	Relationship between parental PTSD and child PTSD symptoms.
Summary of evidence	Moderate to high quality evidence (large sample, inconsistent, precise, direct) finds a medium-sized correlation between increased parental PTSD symptoms and increased child PTSD symptoms. Larger effect sizes were found for maternal vs. paternal PTSD symptoms, parent interview vs. self-report, same

Impact on families

	mode vs. different mode of assessment for parents and children, and longitudinal vs. cross-sectional studies.
Child PTSD symptoms	
35 studies in total, N = 7,850	
<i>A medium-sized association was found between increased parental PTSD symptoms and increased child PTSD symptoms;</i>	
32 studies, $r = 0.31$, 95%CI 0.25 to 0.37, $p < 0.001$, $Qp < 0.001$	
Larger effect sizes were found for maternal vs. paternal PTSD symptoms, parent interview vs. self-report, same mode vs. different mode of assessment for parents and children, and longitudinal vs. cross-sectional studies.	
There were no moderating effects of child assessment type or type of trauma	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Direct

<i>Williamson V, Creswell C, Fearon P, Hiller RM, Walker J, Halligan SL</i>	
The role of parenting behaviors in childhood post-traumatic stress disorder: A meta-analytic review	
Clinical Psychology Review 2017; 53: 1-13	
View review abstract online	
Comparison	Relationship between parental behaviour and child PTSD symptoms.
Summary of evidence	Moderate to high quality evidence (large sample, inconsistent, precise, direct) finds small associations between increased parental positive and negative behaviours and increased child PTSD symptoms. There were larger effect sizes in cross-sectional studies than in longitudinal studies, in studies with more females, in studies using child vs. parent informant measures, and with exposure to group vs. exposure to individual traumas.
Child PTSD symptoms	
<i>Small associations were found between parental behaviours and child PTSD symptoms;</i>	

Impact on families

Overall behaviours: 14 studies, $N = 4,010$, $r = 0.20$, 95%CI 0.13 to 0.26, $p < 0.0001$, $Qp < 0.0001$
 Negative behaviours (e.g. overprotection, hostility): $r = 0.23$, 95%CI 0.15 to 0.31, $p < 0.0001$, $Qp < 0.0001$

Positive behaviours (e.g. warmth, support): $r = 0.14$, 95%CI 0.02 to 0.26, $p < 0.05$, $Qp < 0.0001$
 Moderator analyses found larger effect sizes in cross-sectional studies than in longitudinal studies. There were larger effect sizes in studies with more females and with child vs. parent informant measures of positive behaviours, and with exposure to group vs. exposure to individual trauma for overall behaviours. There were no moderating effects of age, intentional vs. non-intentional traumas, other study measures, study location, and time since trauma exposure.

Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Direct

Explanation of acronyms

CI = confidence interval, N = number of participants, Q = measure of heterogeneity, p = statistical probability of obtaining that result, r = correlation coefficient, z = Fisher's r to z transformation, vs. = versus

Impact on families

Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; reporting bias – selective reporting of results; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small¹¹.

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified

(100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. Less than 0.4 represents a small effect, around 0.5 a medium effect, and over 0.8 represents a large effect¹¹.

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, a RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. A RR or OR of 1.00 means there is no difference between groups. A medium effect is considered if $RR > 2$ or < 0.5 and a large effect if $RR > 5$ or < 0.2 ¹². InOR stands for logarithmic OR where a InOR of 0 shows no difference between groups. Hazard ratios measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship between variables. They can provide an



Impact on families

indirect indication of prediction, but do not confirm causality due to possible and often unforeseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (b) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the independent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of effect across studies (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent considerable heterogeneity and over this is considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula¹¹;

$$I^2 = \left(\frac{Q - df}{Q} \right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data,

an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, these criteria should be relaxed¹³.

|| Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and/or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available and is therefore inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.



Impact on families

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