Complex Trauma and Posttraumatic Growth: A Bibliometric Analysis of Research Output Over Time

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Submitted as partial of requirement for the degree of Master of Clinical Psychology, School of Psychology, The University of Newcastle, Australia

20th November, 2019
Statement of Originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying subject to the Copyright Act 1968.

_______________________
Sophie Ballinger

Date: 14th November, 2019
Acknowledgements of Collaborations

I hereby certify that the work embodied in this thesis has been done in collaboration with other researchers. I have included as part of this thesis a statement, endorsed by my supervisor, clearly outlining the extent of collaboration, with who, and under what auspices.

Associate Professor Lynne McCormack designed this study. I, Sophie Ballinger, was primarily responsible for data extraction and the writing of the thesis. Together, my supervisor and I screened all publications extracted for inclusion using the title, abstract, and where necessary, full text. Data were extracted from included publications according to the data classifications. To provide a measure of quality control, a third independent researcher, Linda Swaab (PhD student), screened those publications that had not met consensus between the first two researchers. Ms Debbie Booth (Senior Research Librarian) contributed to the formulation of the methodology. Mrs Megan Valentine (Statistical Consultant) contributed to the statistical analysis.

__________________________ ____________________________
Student Name: Sophie Ballinger                      Supervisor Name: A.Prof. Lynne McCormack

Date: 14th November, 2019                              Date: 11th November, 2019
Acknowledgements

I want to thank my family, friends, and Adam for being absolute champs. You fed me absolutely necessary amounts of chocolate, made me laugh, and kept me positive through what has been a stressful and amazing two years. Another thank you to my Master’s cohort. Your ability to be so supportive of each other, have fun, and provide snacks during lectures meant I got so much more out of the Master’s experience. And finally, thank you to my supervisor, Lynne, who made everything sound so reasonable when I was stressed, and whose knowledge enabled me to learn so much.
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Complex Trauma and Posttraumatic Growth: A Bibliometric Analysis of Research Output

Over Time

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Abstract

Introduction: The interpersonal nature of complex traumatic events can negatively impact the long-term psychological wellbeing of an individual. However, reconceptualisation through deliberate rumination following complex trauma provides the opportunity for posttraumatic growth. Research in this area has increased in recent years. The aim of this study was to assess the volume and characteristics of research output over time in the fields of complex trauma and posttraumatic growth.

Method: A descriptive repeat cross-sectional study of publications from PsycINFO, MEDLINE, EMBASE, and Psychology and Behavioural Sciences was used across the time periods 1995-1998, 2005-2008, and 2015-2018. Authors jointly assessed article relevance for inclusion. Classifications used for each study were: data-based, country of research institution, country of participants, type of trauma experienced, and trauma terminology.

Results: One-hundred and forty-one articles met criteria for review. The output of publications concerning complex trauma and posttraumatic growth has increased over time with a high proportion of studies conducted by researchers in the United States of America with a focus on war veterans. Relative to descriptive studies, there are very few intervention studies.

Conclusion and Implications: A growing interest in the conceptualisation of posttraumatic growth in the aftermath of complex trauma, was demonstrated. Currently, this field of the literature is dominated by research outcomes from the USA concerning war veterans. Further cross-cultural and types of complex trauma research is needed, and interventional studies would be important for informing therapy.

Key words: Complex trauma; posttraumatic growth; bibliometric study; cross cultural; interventional studies.
Complex Trauma and Posttraumatic Growth: A Bibliometric Analysis of Research Output Over Time

**Introduction**

Until the 1990s within the discipline of psychology, there has been an exclusive focus on pathology, limiting the potential for individuals to define life events through both positive and negative lenses. Integral responses such as hope, altruism, humility, forgiveness, creativity, courage, and perseverance were unrecognised as potential motivators of sense making and pathological adjustment. However, the advent of positive psychology as a scientific study of human flourishing to inform applied psychology and promote growth out of adversity emerged in the 1990s with the work of Mihaly Csikszentmihalyi and Martin Seligman (Seligman & Csikszentmihalyi, 2000). Their work quickly fuelled an interest in the applicability of positive psychology particularly in relation to responses to traumatic events triggering the development of theoretical concepts of meaning making and posttraumatic growth (Joseph, Williams, & Yule, 1993; Tedeschi & Calhoun, 1995, 1996) and the possible co-existence of suffering and happiness (Linley & Joseph, 2004; Seligman, Steen, Park, & Peterson, 2005). In seeking whether the literature has burgeoned exploring complex trauma and posttraumatic growth since the 1990s, the aim of this bibliometric study was to assess the volume and characteristics of research output over parallel periods during the last three decades in the fields of complex trauma and posttraumatic growth.

Importantly, positive psychology increasingly informs clinical work by emphasising psychological wellbeing rather than emotional wellbeing (Joseph & Linley, 2008; Seligman, Steen, Park, & Peterson, 2005). In fact, the cognitive struggle associated with psychological distress as a result of exposure to potentially traumatic events can precipitate purposeful ruminative activity resulting in positive change or posttraumatic growth (Stockton, Hunt, & Joseph, 2011). In the past, therapeutic interventions have tended to focus on eliminating
intrusive re-experiencing and brooding type rumination, however, distressing intrusive thoughts can be utilised by the individual to purposefully reflect on traumatic experiences and act as a precursor to posttraumatic growth (Seligman & Csikszentmihalyi, 2000). This can be seen in cases of complex trauma.

**What Is Complex Trauma?**

Throughout the literature, a variety of definitions relating to ‘complex trauma’ have attempted to provide lucidity depicting the ongoing unravelling of our understanding of traumatic events and their impact on humans. Trauma is considered to be “exposure to actual or threatened death, serious injury, or sexual violence” which results in psychological distress (American Psychiatric Association [APA], 2013). Given the varied responses people have to these experiences, with some individuals experiencing ongoing psychological distress and others not (Briere, Agee, & Dietrich, 2016; Weathers & Keane, 2007), the term “potentially traumatic event” has been considered when referring to the event and not the individual’s psychological response (Overstreet et al., 2016), however, its use does not appear to be consistent. Too commonly, trauma studies provide a distinct lack of clarity separating the type, duration, and intensity of event/s from its impact on an individual (Weathers & Keane, 2007), and a lack of clarity regarding trauma’s definition (Courtois, Ford, Herman, & van der Kolk, 2009).

Nevertheless, complex trauma is generally recognised as multiple or prolonged severe stressors, that are interpersonal in nature (Courtois et al., 2009; Lawson, 2017; van der Kolk, 2005). Courtois et al. (2009) provided one decisive definition which states this interpersonal conflict is specifically harm by a responsible adult at critical periods in the individual’s life (i.e., childhood or adolescence), leading to psychological and behavioural changes, and vulnerability to potentially traumatic events throughout adulthood. This sentiment has been echoed by others (Briere et al., 2016; Lawson, 2017). Some researchers, however, have
provided more flexible definitions, suggesting that complex trauma, while involving the experience of multiple or prolonged traumas, may occur at any point in the lifespan, resulting in psychological, emotional, and relationship difficulties (World Health Organisation [WHO], 2018; Landes, Garovoy, & Burkman, 2013). Herman (1992) and Lawson (2017) also provided the specification that complex trauma occurs when it is impossible for the individual to escape the trauma. In attempting to distinguish between different trauma types, some researchers differentiate single incidence traumas, cumulative non-interpersonal trauma, and cumulative interpersonal trauma (also recognised as complex trauma) (Kira, 2001).

While experiencing potentially traumatic events does not cause ongoing psychological difficulties for the vast majority of people, in a minority it can have a debilitating impact, with an increase in the levels of distress correlated with an increase in the number and types of potentially traumatic events (Briere et al., 2016). Having said that, an individual’s mental wellbeing is something that is commonly impacted by the experience of trauma. From a Western medical model which relies on diagnostic criteria for treatment, PTSD is a common diagnosis along with other comorbid disorders such as depression and anxiety (APA, 2013). However, the diagnosis of PTSD can pathologise normal events, and complicate the individual’s presentation as symptoms often overlap with other potential disorders (Brewin, Lanius, Novac, Schnyder, & Galea, 2009). From a non-pathologising perspective, emotions associated with the experience of trauma are feeling depressed, anxious, guilty, angry, and irritable, while recurring thoughts of the event often distress the individual (Tedeschi & Calhoun, 2004).

It is obvious that type, duration, intensity and level of interpersonal assault remain key factors in recognising the human experience of complex trauma. As such, for the purpose of this study, we define complex trauma as a state of distress caused by traumatic events that are
most likely of an interpersonal nature from trusted others such as caretakers; consisting of multiple or prolonged traumatic experiences which may occur at any point in the lifespan; and impact on healthy social, emotional, relational, and psychological functioning of the individual. Examples of these types of trauma include a range of experiences such as child abuse, war exposure, or being a refugee.

What is Posttraumatic Growth?

Positive psychology has encouraged multiple views of traumatic experiences apart from a psychopathological lens. This has allowed us to recognise the many different ways to integrate responses to traumatic events into the overall life narrative with the possibility that the distress associated with the experience of trauma can lead to positive changes (Joseph, 2012; McCormack & Thomson, 2017). A systematic review of 39 studies by (Linley & Joseph, 2004) suggested that positive change is commonly reported in around 30-70% of survivors of various traumatic events. They also reported that growth is associated with personality traits such as optimism, extraversion, positive emotions, social support, and problem focused, acceptance, and positive reinterpretation coping. In more recent research, reported domains of growth out of trauma include empathy, altruism, forgiveness, humility, and gratitude (McCormack & Adams, 2016; McCormack & Ell, 2017; McCormack & Joseph, 2013).

Due to the prevalence of traumatic distress, the long-term impact it can have on mental health, and the emerging evidence that the cognitive struggle with that distress can result in positive changes to the lives of some individuals, different theories have developed to better understand the processes and domains of posttraumatic growth. These include Joseph and Linley’s (2005) Organismic Valuing Process theory (OVP) and Tedeschi and Calhoun’s (2004) proposition of the five domains of growth. Consequently, posttraumatic growth can be seen as a positive change in psychological wellbeing as a result of cognitive
processing and interpretation following exposure to traumatic experiences (Tedeschi & Calhoun, 2004).

In the OVP theory, Joseph and Linley (2005) describe humans as growth-oriented, drawn to naturally evaluate their experiences and seek wellbeing. Following adversity, humans are likely to experience distressing intrusive thoughts and memories of the event, and engage in cognitive processes that enable them to reconceptualise the event that occurred. Humans are also driven to seek improved wellbeing throughout this process (Joseph & Linley, 2005). There are two distinct drives for wellbeing: psychological well-being or integral wellbeing gained through striving for life goals, having meaningful relationships, and the ability to develop as a person; or subjective well-being, an individual’s general affect promoting a focus on happiness in the moment (Deci & Ryan, 2008; Keyes, Shmotkin, & Ryff, 2002).

In addition, Tedeschi and Calhoun proposed that posttraumatic growth consists of five domains: “greater appreciation of life and changed sense of priorities; warmer, more intimate relationships with others; a greater sense of personal strength; recognition of new possibilities or paths for one’s life; and spiritual development” (Tedeschi & Calhoun, 2004, p.6). There is clearly many discourses seeking to explain the phenomenon of posttraumatic growth. Through a mathematical lens, some researchers seek to measure an increase in amount, value or importance of characteristics over time. Others see it as a biological process of constructive personality development, maturity, and a natural and normal propensity in humans to self-actualise (Joseph, 2019). By providing an explanation for the processes involved in growth (Joseph & Linley, 2005) and providing ways of detecting the presence of growth (Tedeschi & Calhoun, 2004), this allows researchers to more clearly define and detect posttraumatic growth in their own research.
There have been at least two meta-analyses conducted in order to gain a better understanding of the nuances of posttraumatic growth (Helgeson, Reynolds, & Tomich, 2006; Prati & Pietrantoni, 2009). However, these meta-analyses were not limited to complex trauma. In addition, and possibly due to the different discourses around posttraumatic growth mentioned above, many researchers seem to combine the outcomes of people experiencing different types of trauma into the one study: some participants experiencing complex traumatic events are grouped with participants experiencing a singular traumatic event. Similarly, an illness ideology often clouds the overview of complex trauma and posttraumatic growth neglecting the biological perspective that growth following adversity is a process of normal personality development that if nurtured, assists individuals build strength against future adversity and lead more fulfilling functioning lives (Joseph, 2019). These complexities compound current research and appear to have impacted on the results of these studies.

The Current Study

Analysing the way in which research has changed over time could provide an opportunity to see whether newly identified characteristics facilitating or developing from posttraumatic growth have emerged, to recognise the changing interpretation of complex trauma, and to identify priorities in this field of research. It will allow researchers to consider how this knowledge may impact our understanding of growth processes following trauma and therefore how growth may be encouraged in practice. We aimed to assess the volume and characteristics of the research output over time regarding complex trauma and posttraumatic growth. Specifically, this involved looking at the study type (descriptive, intervention, or measures), the countries of the institutions involved in conducting research, the countries of the participants, the types of trauma participants have experienced, domains of posttraumatic growth found in previous research, the trauma language used in the research, and how this has changed over three decades (1990s, 2000s, and 2010s). We started from the late 1990s to
capture the change in research after the introduction of positive psychology and posttraumatic growth. This was to assist in identifying research priorities to encourage the progression of research in this field.

**Method**

**Design**

A descriptive repeat cross-sectional study of peer-reviewed publications was conducted.

**Data Sources**

A number of databases were used to find peer-reviewed publications related to complex trauma and posttraumatic growth in the time periods 1995-1998, 2005-2008, and 2015-2018. These databases were: PsycINFO, Medline, EMBASE, and Psychology and Behavioural Sciences. Looking at a small number of databases within short time periods enabled us to assess the change in research output over time on complex trauma and posttraumatic growth.

In order to limit the search to articles only on posttraumatic growth and complex trauma, a large number of search terms were used, and differed slightly depending on the database. The terms used have been included in Appendix B. These search terms were agreed on by SB and LM. Articles were then imported to Covidence for title and abstract screening by SB and LM, with disagreements decided by an independent third researcher. Further screening occurred in Endnote by SB, with a selection of these checked for agreement by LM. A large number were excluded due to complex trauma or posttraumatic growth not being clearly present in the study in line with our definition of complex trauma. Given the cognitive struggle over time necessary for posttraumatic growth to manifest, studies based only on children were excluded. Theory-based papers and reviews of other studies that did
not use participants were included due to their contribution in providing more understanding towards processes involved in posttraumatic growth.

We used both quantitative analysis and a mapping technique for the bibliometric analysis. For the quantitative analysis, data were input into SPSS Version 24. Chi-square analyses were conducted separately for each variable: wherever assumptions for chi-square analyses were violated, Fischer’s Exact Tests were used. The study type, the country of the institution involved in the research, the country of residence of participants at the time of the study, the types of trauma experienced by participants, domains of posttraumatic growth found in previous research, and the trauma language used in the research were all analysed. Each option of every variable was noted for analysis during the screening stage.

Results

Included Publications

Out of 1623 references initially imported into Covidence for screening, 154 duplicates were removed and 1000 were deemed irrelevant due to lack of reference to posttraumatic growth and lack of complex trauma according to the definition we used. Full-text screening occurred in Endnote, with more publications found to not reference posttraumatic growth or complex trauma, and publications using children as participants were excluded. This led to a total of 141 publications included for analysis. Throughout this time, continued discussion led to a more refined understanding of the definition of complex trauma. The screening process can be seen in Figure 1.
Figure 1. The process of screening publications using Covidence and Endnote.

Volume of Publication Output over Time

In 1995 – 1998, there were no studies on complex trauma and posttraumatic growth. In 2005 – 2008, there were 25 publications (18% of all 141 studies included) relating to complex trauma and posttraumatic growth. In 2015 – 2018, there were 116 publications (82%) relating to complex trauma and posttraumatic growth. The frequency of publication in each year can be seen in Figure 2.
Figure 2. Frequency of publication output in each year. It is important to note that we have not included publications in between the focal time periods.

Study Classification

Table 1

Frequency of different publication classifications within each time period

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Descriptive</td>
<td>0</td>
<td>21 (84%)</td>
<td>106 (91%)</td>
<td>127 (90%)</td>
</tr>
<tr>
<td>Intervention</td>
<td>0</td>
<td>3 (12%)</td>
<td>7 (6%)</td>
<td>10 (7%)</td>
</tr>
<tr>
<td>Measures</td>
<td>0</td>
<td>1 (4%)</td>
<td>3 (3%)</td>
<td>4 (3%)</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>25</td>
<td>116</td>
<td>141</td>
</tr>
</tbody>
</table>

Table 1 shows the number of publication types based on the publication period, based on the adult data. The variable “Measures” indicates research studies specifically validating measures of posttraumatic growth in different populations. As can be seen, the vast majority published during the observed time periods were descriptive (90%). The proportion of study
types did not differ significantly between the 3 time periods (Fishers Exact Test 1.953 p=.319).

**Publication Output by Country of Institution**

There were a number of studies that involved collaboration between researchers affiliated with research institutions from different countries. Therefore, the percentages quoted did not add to 100%

Table 2

*The number of publications produced in each time period by the country in which the research institution was based.*

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>USA</td>
<td>0</td>
<td>14 (56%)</td>
<td>72 (62%)</td>
</tr>
<tr>
<td>Israel</td>
<td>0</td>
<td>4 (16%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td>UK</td>
<td>0</td>
<td>1 (4%)</td>
<td>11 (10%)</td>
</tr>
<tr>
<td>Australia</td>
<td>0</td>
<td>3 (12%)</td>
<td>6 (5%)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>6 (24%)</td>
<td>34 (24%)</td>
</tr>
</tbody>
</table>

*Note.* "Other" includes Bosnia and Herzegovina, Canada, China, Denmark, Finland, Georgia, Germany, Greece, Italy, Kenya, Mexico, New Zealand, Northern Ireland, Norway, Palestine, Poland, Slovakia, Slovenia, South Africa, Switzerland, The Netherlands, The Philippines, and Turkey. The (%) represents the percentage of the total number of publications in that time period. The percentages do not add to 100% as there was some overlap across categories with collaboration between countries.

In Table 2, the percentage represents the proportion of papers produced in that time period for each country, showing the proportion of publications concerning complex trauma and posttraumatic growth published by each country did not change for the different time
periods (Fishers Exact 2.684 p=.449). Additionally, this table shows the main countries contributing to the most publications on these two topics. Researchers working in the USA contributed to the highest output out of all countries in both the second and third time periods (at 56% and 62% of the publications respectively), followed by Israel, the UK, and Australia.

**Country of Residence of Research Participants**

There were a number of studies that involved the use of research participants from more than one country. Therefore, the percentages quoted within each time period did not add to 100%.

**Table 3**

*The frequency of the reported countries of residence of participants (or whether participants were used) within each time period.*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>0</td>
<td>12 (48%)</td>
<td>48 (41%)</td>
</tr>
<tr>
<td>Israel</td>
<td>0</td>
<td>4 (16%)</td>
<td>14 (12%)</td>
</tr>
<tr>
<td>UK</td>
<td>0</td>
<td>2 (8%)</td>
<td>5 (4%)</td>
</tr>
<tr>
<td>Australia</td>
<td>0</td>
<td>1 (4%)</td>
<td>5 (4%)</td>
</tr>
<tr>
<td>Palestine</td>
<td>0</td>
<td>2 (8%)</td>
<td>4 (3%)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>10 (40%)</td>
<td>46 (39%)</td>
</tr>
</tbody>
</table>

*Note.* “Other” includes Bosnia and Herzegovina, Canada, Congo, Denmark, El Salvador, Georgia, Germany, Italy, Jordan, Kosovo, Liberia, New Zealand, Northern Ireland, Norway, Not Specified, Poland, Rwanda, Sierra Leone, Slovakia, South Africa, The Netherlands, The Philippines, Turkey, Slovenia, Greece, and studies without participants. These results reflect the country of residence at the time of the study population. (%) is the percentage of articles that were published on that particular population during that time period. The percentages do not add to 100% as there was some overlap across categories with use of participants across different countries.
Similarly, the majority of the populations studied resided in the USA in the studied time periods (44% and 42% respectively), followed by Israel, UK, Australia, and Palestine. Again, there was no difference between the time periods (Fishers Exact 1.010 p=.883).

**Trauma Type**

As can be seen in Table 4, the most studied populations were War Veterans (31%), Adult survivors of childhood sexual abuse (14%), War Zone Civilians (10%) and Refugees (9%) – see table 4. Note that the numbers of studies in each time period do not add to total number of studies in that time period as some publications reported multiple trauma types. All other trauma types occurred in 53% of the total number of publications. Two by two cross tabulations were performed where each individual variable was measured against all the other variables in each time period. Analysis on the proportion of studies focusing on War veterans vs participants experiencing all other trauma types combined showed a significant increase in 2015-2018 compared to 2005-2008 ($\chi^2_{(1)}=5.691$ p=0.17)
Table 4

Types of trauma studied in each time period.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>War Veterans</td>
<td>0</td>
<td>4</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>Adult Survivors of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood sexual</td>
<td>0</td>
<td>4</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warzone Civilians</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Refugees</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>17</td>
<td>43</td>
<td>60</td>
</tr>
<tr>
<td>Totals</td>
<td>0</td>
<td>32</td>
<td>135</td>
<td>167</td>
</tr>
</tbody>
</table>

Note. Each trauma type on their own are not necessarily considered complex according to our definition.

Numbers of studies in each time period do not add to total number of studies in that time period as some publications reported multiple trauma types. ‘Other’ includes childhood trauma, community violence, domestic violence, genocide, internally displaced persons, institutionalised care, terrorism, military sexual trauma, political prisoner, prisoner of war, sexual violence, torture, and frontline personnel. Childhood trauma consists of any type of childhood trauma that was not sexual, or not specified as sexual. Domestic violence includes intimate partner violence. Frontline personnel include humanitarian workers, nurses, police officers, and paramedics. A complete table can be seen in Appendix E. In brackets is the percentage of total publications within that time period.

In Table 5, when considering the frequency of publications about different trauma types from different countries of research institution, percentages do not add to 100% due to the multiple trauma types reported on in many publications and the collaboration that existed between researchers from different countries. As can be seen in Table 5 and Figure 3, it appeared that the most publications about adult survivors of Childhood Sexual Trauma,
Refugees, War Veterans, and Other Trauma Types were by the USA (61%, 73%, 73%, and 57% respectively). This suggests that research in complex trauma and outcomes regarding posttraumatic growth, are likely to be heavily influenced by perceptions of trauma that are held in the USA.

Table 5

*The frequency of trauma types by different countries of research institution publications about complex trauma and posttraumatic growth.*

<table>
<thead>
<tr>
<th></th>
<th>Adult Survivors of Childhood</th>
<th>Refugees</th>
<th>War Veterans</th>
<th>War Civilians</th>
<th>War Other</th>
<th>Other Trauma Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>1 (4%)</td>
<td>2 (13%)</td>
<td>1 (2%)</td>
<td>0 (0%)</td>
<td>6 (10%)</td>
<td></td>
</tr>
<tr>
<td><strong>Israel</strong></td>
<td>3 (13%)</td>
<td>0 (0%)</td>
<td>6 (12%)</td>
<td>6 (35%)</td>
<td>10 (16%)</td>
<td></td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>4 (17%)</td>
<td>0 (0%)</td>
<td>6 (8%)</td>
<td>1 (6%)</td>
<td>4 (7%)</td>
<td></td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td>14 (61%)</td>
<td>11 (73%)</td>
<td>37 (73%)</td>
<td>7 (41%)</td>
<td>35 (57%)</td>
<td></td>
</tr>
<tr>
<td><strong>Other Country</strong></td>
<td>5 (22%)</td>
<td>3 (20%)</td>
<td>10 (19%)</td>
<td>10 (59%)</td>
<td>17 (28%)</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Percentages in each column do not add to 100% due to collaboration between countries in much of the research. “Other Trauma Type” includes Childhood Trauma, Institutionalised Care, Domestic Violence, Military Sexual Trauma, Frontline Personnel, Community Violence, Political Prisoner, Genocide, IDPs, Terrorism, Torture, POW, Sex Trafficking, and Sexual Violence. “Other Researchers” includes Bosnia and Herzegovina, Canada, China, Denmark, Finland, Georgia, Germany, Greece, Italy, Kenya, Mexico, New Zealand, Northern Ireland, Norway, Palestine, Poland, Slovakia, Slovenia, South Africa, Switzerland, The Netherlands, The Philippines, and Turkey. The complete table can be seen in Appendix F. The percentages reflect the percentage of publications about that trauma type.
Domains of Growth

Table 6

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Altruism</td>
<td>0</td>
<td>0 (0%)</td>
<td>9 (8%)</td>
<td>9 (6%)</td>
</tr>
<tr>
<td>Gratitude</td>
<td>0</td>
<td>1 (4%)</td>
<td>5 (4%)</td>
<td>6 (4%)</td>
</tr>
<tr>
<td>Forgiveness</td>
<td>0</td>
<td>1 (4%)</td>
<td>2 (2%)</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Empathy</td>
<td>0</td>
<td>0 (0%)</td>
<td>3 (2%)</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Humility</td>
<td>0</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>2 (8%)</td>
<td>18 (16%)</td>
<td>20 (14%)</td>
</tr>
</tbody>
</table>

Note: In brackets is the percentage of publications each factor appeared in within each time period.

The five domains of growth (gratitude, forgiveness, empathy, altruism, and humility) were rarely reported. Assumptions for Chi Square Analysis were violated for all variables, so only Fischer’s Exact Test has been used. As can be seen in Table 6, gratitude and forgiveness were the only ones reported in 2005-2008. In 2015-2018, there was a total of 20 instances of
any of the domains. It is important to note that in some papers more than one domain was mentioned.

**Trauma Terminology**

Language around trauma was considered, including whether a diagnosis was reported, the use of diagnostic screening, reported distress, and the label researchers used in regards to trauma.

Table 7

*Frequency of use of diagnostic screening and reporting of diagnosis prior to commencement of study.*

<table>
<thead>
<tr>
<th>Diagnostic Screening Used in Study</th>
<th>N/A</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
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<tr>
<td>Diagnosis</td>
<td>12 (8%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
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<tr>
<td>Not Reported</td>
<td>1 (1%)</td>
<td>38 (27%)</td>
<td>65 (46%)</td>
<td>104 (74%)</td>
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<tr>
<td>Reported</td>
<td>0 (0%)</td>
<td>13 (9%)</td>
<td>12 (9%)</td>
<td>25 (18%)</td>
</tr>
<tr>
<td>Total</td>
<td>13 (9%)</td>
<td>51 (36%)</td>
<td>77 (55%)</td>
<td>141 (100%)</td>
</tr>
</tbody>
</table>

*Note.* The percentages represent the percentage of the total number of studies (141). N/A represents papers that did not include participants and so researchers could not make use of diagnoses or diagnostic screening. The percentages represent the percentage of the total number of studies (141).

Table 7 shows that out of all publications, not considering the time period, the majority (74%) did not report a diagnosis of participants prior to commencement of the study.

It can also be seen that just over half of the studies used diagnostic screening (55%). This shows that the use of diagnostic screening is considered an important part of assessing for the effects of a potentially traumatic experience in a large number of research institutions. Additionally, a chi-square analysis revealed that the proportion of studies making use of diagnostic screening across the three time periods was not significant ($\chi^2(2)=3.449, p=.178$).
It was interesting that although the majority used diagnostic screening and compared different scores within this diagnostic screening against other factors, only a minority within this portion of studies reported an existing diagnosis (9%). This suggests that the diagnosis may not have been considered relevant to the study or that many participants had not sought psychological assistance or a diagnosis.

Table 8

The label of trauma used by researchers analysed against whether distress was reported by participants in those studies.

<table>
<thead>
<tr>
<th>Trauma Terminology</th>
<th>Distress Reported</th>
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<tbody>
<tr>
<td></td>
<td>N/A</td>
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<tr>
<td>Potentially Traumatic Event</td>
<td>0</td>
</tr>
<tr>
<td>Trauma</td>
<td>13 (9%)</td>
</tr>
<tr>
<td>Total</td>
<td>13 (9%)</td>
</tr>
</tbody>
</table>

Note. In brackets is the percentage of the total number of publications (141).

The majority of publications reported the presence of distress (69%). This was sometimes in the form of qualitative data, and sometimes as a result of diagnostic screening outcomes. A chi-square analysis revealed that the proportion of publications reporting distress over time did not change ($\chi^2(2)=3.51, p=.173$).

Additionally, the vast majority of those publications reporting distress used the term “Trauma” (65%) rather than “distress in the aftermath of a Potentially Traumatic Event” (4%). However, the presence of the term “Trauma” (19%) rather than “Potentially Traumatic Event” (3%) in papers in which they did not specifically report distress suggests researchers may be missing a key element in their trauma research: just because an event might be considered traumatic, it does not necessarily follow that the individual experienced enough
psychological traumatic distress to result in posttraumatic growth. A chi-square analysis also revealed that there was no change in the proportion of publications reporting “Potentially Traumatic Event” compared to “Trauma” over time ($\chi^2(1) = 2.32, p = .128$).

**Discussion**

The aim of this study was to assess the volume and characteristics of research output over time regarding complex trauma and posttraumatic growth. There were a number of interesting outcomes. First, the vast majority of publications were descriptive, reflecting that the research considering complex trauma and posttraumatic growth is in the early stage of interest with only a small amount of research informing clinicians in how best to support people seek psychological growth out of traumatic adversity. Second, the domination of research from researchers in the USA currently biases interpretations of research outcomes in this field. Applicability of the construct of posttraumatic growth will benefit from research conducted cross-culturally including non-Westernised cultures, and other Western cultures particularly non-English speaking groups. Furthermore, while the range of trauma types studied changed over time, war veterans were the most studied sub-group, limiting the applicability of the findings to other trauma sub-groups. Lastly, the language used in the study of traumatic exposure to potentially traumatic events and subsequent distress revealed inconsistencies in terminology and interpretation of the word ‘trauma’.

A growing interest in the fields of complex trauma and posttraumatic growth over time was highlighted in our results, with an increase in publications from the 1990s through to 2018. The initial time period of 1995-1998 had been chosen to capture any early studies following the launch of the scientific study of positive psychology and the construct of posttraumatic growth, however none appeared in our literature search that included the concept of complex trauma. This result was unexpected however, results did provide a chance to highlight the change in research priorities over time in this field.
Although the volume of studies increased in the next two timeframes there was no change in the pattern of study types published. Over time, the majority of publications remained descriptive reflecting the fledging stage of this research, the theoretical underpinnings of posttraumatic growth, and its presentation in real life.

Importantly, the small proportion of studies testing growth intervention in populations who have experienced complex traumatic events highlights a future direction of research for informing clinical work. Treatments profiled included CBT (Murphy, Palmer, Lock, & Busuttil, 2017; Walker-Williams & Fouché, 2017), expressive writing as a therapeutic strategy (Pulverman, Boyd, Stanton, & Meston, 2016), cognitive processing therapy (Russano, Straus, Sullivan, Gobin, & Allard, 2017; Walker-Williams & Fouché, 2017), acceptance and commitment therapy (Russano et al., 2017), group therapy using CBT techniques (Walker-Williams & Fouché, 2017), and embodied imagination (White, 2015). The small number of interventional studies (7% overall) suggest that intervention strategies are yet to be developed that support deliberate rumination for positive reconceptualisation following distress associated with exposure to complex traumatic events. There was a paucity of research validating the use of measures specific to the fields of complex trauma and posttraumatic growth. Further studies in more varied complex trauma populations will result in more rigorous research, as it would ensure outcomes are accurately interpreted (Boateng, Neilands, Frongillo, Melgar-Quiñonez, & Young, 2018)

Researchers from the USA provided the vast majority of publications perhaps reflecting the birthplace of the scientific interest of positive psychology, the construct of posttraumatic growth, and the resultant interest and funding. For example, in 2014 the US Department of Veterans Affairs (DVA) provided over $586 million on medical research (DVA, 2014). Although valuable research, it is within a narrow band of trauma exposure and a specific western interpretation of the relationship and the constructs of complex trauma and
posttraumatic growth. This was reflected within this study with *country of residence of research participants* and *country of residence of research institution* dominated by the USA.

The westernised nature of the construct of posttraumatic growth was highlighted in our research, supporting statements made by Kashyap and Hussain (2018) regarding the lack of research conceptualising posttraumatic growth framework in non-Westernised cultures. It has been suggested that ways of coping cross culturally following traumatic events is an area of research needing much enlightenment (Kashyap & Hussain, 2018). It is assumed that rumination plays a role in the processes of growth (Joseph & Linley, 2005), however, culture influences the way individuals experience or perceive distressing events (Kashyap & Hussain, 2018). With cultural bias inherent in Western devised posttraumatic growth theories, the scales used to measure growth such as the Post-Traumatic Growth Inventory do not allow for cultural nuances and interpretations (Kashyap & Hussain, 2018). Narratives of trauma and growth are unique to specific cultures and future research can lend itself to understanding experiences, interpretations, and recovery following exposure to traumatic events cross-culturally. Additionally, differences in collectivist and individualist cultures may generate different outcomes from the process of rumination depending on interpretation of events, weight of responsibility, and cause and effect (Kashyap & Hussain, 2018). The considerations proposed in regards to cross-cultural research can be applied to a number of papers included in this study and suggest that there may be issues in interpreting results (e.g., Davey, Heard, & Lennings, 2015; Ellis et al., 2015).

The type of trauma that appeared most often in the research (i.e., the experience of being a war veteran), reflects priorities of different time periods, historical events, research interest, and as stated previously, funding. The large presence of studies involving combat trauma in war veterans, and especially the large increase in proportion of studies in this population from 2005-2008 to 2015-2018, suggests researchers are seeking new ways to
understand and assist traumatised veterans particularly in the USA where military personnel numbers from ongoing theatres of war, have continued to offer therapeutic challenges. Combat trauma in the 21st Century has offered researchers in the US the opportunity to explore the dyad of complex trauma and posttraumatic growth.

The language used revealed inconsistencies in trauma terminology. Very few studies referred to “potentially traumatic events” (a total of 7%). Most used the term “trauma”, with one-fifth not explicitly referring to whether distress was actually experienced by participants. This creates issues in the conclusions drawn by the researchers: psychological distress is an integral part of the trauma experience. This may act as a barrier in understanding the relationship between trauma and growth, because rumination and its associated distress are an important part of the growth process (Joseph & Linley, 2005). For those studies in which researchers reported using a diagnostic tool to establish mental wellbeing, over half included diagnostic screening (55%) rather than relying on the presence of a trauma-related diagnosis alone. This screening helped identify the presence of distress in participants as a result of potentially traumatic experiences in participants who may not have a trauma-related diagnosis. The critical findings of this review has been summarised in Table 9.

Table 9.
*Critical findings from the research.*

There is:

- A growing interest in the fields of complex trauma and posttraumatic growth over the last three decades.
- A paucity of research concerning complex trauma and posttraumatic growth across types of traumatic exposure.
- An abundance of combat-related trauma most commonly explored by USA researchers informing human responses to traumatic events, including posttraumatic growth.
- A lack of cross-cultural research considering specific interpretations of human responses to potentially traumatic events and conceptualisations around recovery and wellbeing.
- Misleading language used in defining type, intensity, and complexity of traumatic events and responses, confounding our understanding of the relationships between these two constructs.
Clinical Significance

Clinically, this study reveals the paucity of research informing cross-cultural attitudes towards the relationship and conceptualisation of complex trauma and posttraumatic growth. It has highlighted that currently, Western interpretation dominates the research that investigates human responses to potentially traumatic events and consequential posttraumatic growth and our interpretation of these cross culturally. It also involves recognising that research outcomes may be skewed by cultural biases and trauma type advising our research and therapeutic direction. Clinically, it is important to recognise and harness the cultural nuances of traumatic responses and posttraumatic growth.

Furthermore, it highlighted the importance of clarity and the often misleading phraseology used in defining type, intensity, and complexity of traumatic events and responses. Similarly, providing baselines for grouping participants together can provide a springboard for more conclusive findings. Ongoing clarification of various traumatic experiences and responses remains important.

The types of trauma researched in the fields of complex trauma and posttraumatic growth impacts clinical considerations. We found that interpersonal traumatic experiences were limited to war veterans, children who have experienced sexual trauma, and refugees. This impacts our knowledge regarding posttraumatic growth and its presentation in different groups of survivors. Given the paucity of intervention studies, therapists and clients would benefit from studies that explore the harnessing of posttraumatic growth following complex traumatic exposure and distress.

Directions for Future Research

The fields of complex trauma and posttraumatic growth would benefit from further research in cross-cultural settings, ongoing clarification of the definition of complex trauma
within studies, more explanatory and consistent use of trauma terminology, a broader variety of interpersonal traumatic events included in the research, and a greater number of intervention studies to assist with posttrauma therapy. In terms of clarifying the definition of complex trauma, we put forward the following description: Complex trauma is an impacting event directed at an individual or individuals that causes severe psychological or emotional distress. It can be cumulative i.e., multiple and ongoing, and interpersonal, with interpersonal trauma types either: 1) involving a betrayal of trust; 2) not involving a betrayal of trust. With more consistent use of terminology, we also suggest that future research focuses on using “potentially traumatic event” as a general terminology rather than “trauma”, inclusive of a baseline provided within studies of participants who clarify their subjective level of posttrauma related distress at the point of involvement.

The implications of this research for clinical practice, policy, and research has been summarised in Table 10.

Table 10. 
Implications of this review for practice, policy, and research.

- Further research is needed in cross-cultural settings, clarification of the definition of complex trauma, more consistent use of terminology, a broader variety of interpersonal traumatic events included in the research, and a greater number of intervention studies to assist with psychological therapy are important.
- Clarity is required in recognising different cultural nuances of growth and how these impacts on identification in research and clinical practice.
- We propose a new definition of complex trauma: Complex trauma is an impacting event directed at an individual or individuals that causes severe psychological or emotional distress. It can be cumulative i.e., multiple and ongoing, and interpersonal, with interpersonal trauma types either: 1) involving a betrayal of trust; 2) not involving a betrayal of trust.

Limitations

Our research only provided a small subsection of the research output over the past three decades as a way of comparing equal corresponding time periods within each decade against one another. However, this meant missing important papers that occurred outside of the three time periods that influenced our research.
Obtaining these papers from a number of databases was another way to assist with obtaining as many papers from each time period as possible, however it was still limited by the university databases from which we could access papers. While findings of humility, forgiveness, empathy and altruism as domains of posttraumatic growth did occur in the research (McCormack & Adams, 2016, McCormack & Joseph, 2013), they fell outside the targeted times of this study.

Additionally, there are limitations in the trauma types included in the research. For example, different countries have different criteria for what constitutes being a war veteran (e.g., Department of Veterans Affairs, 2019; Dominic Murphy et al., 2015). Length of time exposed to combat and risk of exposure to potentially traumatic events was not always made clear in the studies. As a result, it is not clear that the experience of all participants resulted in complex trauma. This extends on our discussion regarding which theoretical lens is guiding the research, types of potentially traumatic events, length of time experiencing those events, and the severity of psychological trauma. Consistent terminology and a stated philosophical stance are all important aspects of complex trauma and posttraumatic growth research for better understanding the relationship between complex trauma and posttraumatic growth.

**Conclusion**

This bibliometric analysis was the first known research revealing the volume and characteristics of the research output over time in regards to complex trauma and posttraumatic growth, and assisted in identifying research priorities to encourage the progression of research in this field. Overall, interest in the field has grown exponentially over the past three decades and has contributed to our understanding of the relationship between complex trauma and posttraumatic growth. This study has allowed us to see where most research has been conducted and on which groups of individuals, and where future research can be directed.
References


Lawson, D. (2017). Treating Adults With Complex Trauma: An Evidence-Based Case Study.


doi:10.1023/B:JOTS.0000014671.27856.7e


doi:10.1037/tra0000193


Appendix A: Manuscript Submission Guidelines

TVA accepts comprehensive reviews of research or legal reviews that address any aspect of trauma, violence or abuse. Reviews must be based on a sufficient number of studies to justify synthesis. Reviewed literatures may come from the social or behavioral sciences or the law.

Each manuscript must:

- be prepared using APA style, and be **no longer than 40 double-spaced pages**, including references, tables, and figures;
- include an abstract of up to 250 words describing the topic of review, method of review, number of research studies meeting the criteria for review, criteria for inclusion, how research studies were identified, and major findings;
- begin with a clear description of the knowledge area that is being researched or reviewed and its relevance to understanding or dealing with trauma, violence, or abuse;
- provide a clear discussion of the limits of the knowledge that has been reviewed;
- include two summary tables: one of critical findings and the other listing implications of the review for practice, policy, and research;
- include a discussion of diversity as it applies to the reviewed research.

Scope of the Journal

*Trauma, Violence, & Abuse (TVA)* is devoted to organizing, synthesizing, and expanding knowledge on all forms of trauma, abuse, and violence. This peer-reviewed, online journal is practitioner oriented and will publish only reviews of research and law review articles. *TVA* is dedicated to professionals and advanced students who work with any form of trauma, abuse, and violence. It is intended to compile knowledge that clearly affects practice, policy, and research.
TVA publishes reviews of research studies. We also publish legal analyses, which include reviews of case outcomes, laws, or the research upon which the analyses are based. Reviews must be based on a sufficient number of studies to justify synthesis. Reviewed literatures may come from the social or behavioral sciences or the law. Reviews of issues related to trauma, violence, and/or abuse are not appropriate unless they are based on a comprehensive review of research. TVA does not publish case studies or reports on individual research studies.
Appendix B: Keyword Search Terms for the Databases

Database: PsycINFO

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COMPLEX TRAUMA AND POSSTRAUMATIC GROWTH

<p>| | |</p>
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| 19| police/  
| 20| emergency health service/ or emergency service*.mp. or emergency care/ or paramedic*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]  
| 21| emergency personnel.mp. or rescue personnel/  
| 22| aid work*.mp.  
| 23| partner violence/ or family violence/ or battered woman/  
| 24| intimate partner violence.mp. or partner violence/  
| 25| betrayal trauma.mp.  
| 26| cumulative trauma.mp.  
| 27| shattered assumption*.mp.  
| 28| exp child neglect/  
| 29| Physical abuse.mp. or physical abuse/  
| 30| sex trafficking/ or sexual exploitation/  
| 31| forced marriage/  
| 32| 1 or 2 or 3 or 4 or 5  
| 33| 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31  
| 34| 32 and 33  
| 35| limit 34 to yr="1995 -Current"  

Database: Psychology and Behavioural Sciences

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|   | Limiters - Published Date:  
|   | 19950101-20191231  
| S65 | S62 AND S63 | Search modes - Boolean/Phrase  
| S64 | S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 | Search modes - Boolean/Phrase  
| S63 | S33 OR S34 OR S35 OR S36 OR S37 | Search modes - Boolean/Phrase  
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<td>forced marriage</td>
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<td></td>
<td>(MH &quot;Human Trafficking&quot;) OR &quot;sex trafficking&quot;</td>
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<td>Search modes - Boolean/Phrase</td>
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<td>(MH &quot;Neglect (Omaha)&quot;)</td>
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<td>gang rape</td>
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<td>S56</td>
<td>shattered assumption#</td>
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<td>S55</td>
<td>betrayal trauma</td>
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<td>S54</td>
<td>genocide</td>
<td>Search modes - Boolean/Phrase</td>
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<tr>
<td>S53</td>
<td>(MH &quot;Humanitarian Aid&quot;) OR &quot;aid work*&quot;</td>
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</tr>
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<td>S52</td>
<td>paramedic*</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
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<td>(MH &quot;Emergency Service&quot;) OR (MH &quot;Emergency Medical Services&quot;)</td>
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<td>S49</td>
<td>(MH &quot;Refugees&quot;)</td>
<td>Search modes - Boolean/Phrase</td>
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<td>S48</td>
<td>(MH &quot;War&quot;) OR (MH &quot;War Crimes&quot;) OR (MH &quot;Humanitarian Aid&quot;) OR (MH &quot;Concentration Camps&quot;) OR &quot;ethnic cleansing&quot;</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
<tr>
<td>S47</td>
<td>(MH &quot;Military Personnel&quot;) OR (MH &quot;Vietnam Veterans&quot;) OR (MH &quot;Veterans&quot;) OR &quot;military veteran*&quot; OR (MH &quot;Overseas Deployment&quot;) OR (MH &quot;Active Duty Personnel&quot;)</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
<tr>
<td>S46</td>
<td>(1st or first) N1 respond*</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
<tr>
<td>S45</td>
<td>(MH &quot;Domestic Violence&quot;) OR (MH &quot;Dating Violence&quot;)</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
<tr>
<td>S44</td>
<td>(MH &quot;Rape&quot;)</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
<tr>
<td>S43</td>
<td>(MH &quot;Incest&quot;)</td>
<td>Search modes - Boolean/Phrase</td>
</tr>
</tbody>
</table>
(MH "Child Abuse, Sexual") OR (MH "Elder Abuse") OR (MH "Intimate Partner Violence") OR (MH "Child Abuse Survivors") OR (MH "Battered Men") OR (MH "Sexual Abuse") OR (MH "Child Abuse") OR (MH "Battered Women") OR (MH "Abuse Recovery: Emotional (Iowa NOC")

Search modes - Boolean/Phrase

"complex trauma" OR (MH "Rape Trauma Syndrome (Saba CCC") OR (MH "Post-Trauma Response (Saba CCC") OR (MH "Multiple Trauma") OR (MH "Trauma Nursing") OR (MH "Trauma") OR (MH "Rape-Trauma Treatment (Iowa NIC") OR (MH "Rape-Trauma Syndrome, Silent Reaction (NANDA") OR (MH "Rape-Trauma Syndrome (NANDA") OR (MH "Rape-Trauma Syndrome, Compound Reaction (NANDA") OR (MH "Post Trauma Response (NANDA") OR "cumulative trauma"

Search modes - Boolean/Phrase

(MH "Stress Disorders, Post-Traumatic") OR "posttraumatic stress disorder" OR "post traumatic stress disorder"

Search modes - Boolean/Phrase

(posttraumatic or post traumatic)

N1 stress

Search modes - Boolean/Phrase

meaning making

Search modes - Boolean/Phrase

"positive change"

Search modes - Boolean/Phrase

"adversarial growth"

Search modes - Boolean/Phrase

"psychological growth"

Search modes - Boolean/Phrase

(posttraumatic or post traumatic)

N1 growth

Search modes - Boolean/Phrase

S30 AND S31

Search modes - Boolean/Phrase

S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22

Search modes - Boolean/Phrase
OR S23 OR S24 OR S25 OR S26
OR S27 OR S28 OR S29

S30 S1 OR S2 OR S3 OR S4 OR S5 Search modes - Boolean/Phrase
S29 physical abuse Search modes - Boolean/Phrase
S28 forced marriage Search modes - Boolean/Phrase

(MH "Human Trafficking") OR "sex trafficking" Search modes - Boolean/Phrase
S27 "family violence" OR ("MH elder abuse") OR "institutional abuse" OR "out of home care" OR ("MH psychological trauma") OR "childhood trauma" Search modes - Boolean/Phrase
S26 (MH "Neglect (Omaha)") Search modes - Boolean/Phrase
S25 gang rape Search modes - Boolean/Phrase
S24 shattered assumption# Search modes - Boolean/Phrase
S23 betrayal trauma Search modes - Boolean/Phrase
S22 genocide Search modes - Boolean/Phrase

(MH "Humanitarian Aid") OR "aid work*" Search modes - Boolean/Phrase
S20 paramedic* Search modes - Boolean/Phrase
S19 (MH "Emergency Service") OR (MH "Emergency Medical Services") Search modes - Boolean/Phrase
S18 (MH "Police") Search modes - Boolean/Phrase
S17 (MH "Refugees") Search modes - Boolean/Phrase
S16 (MH "War") OR (MH "War Crimes") OR (MH "Humanitarian Aid") OR (MH "Concentration Camps") OR "ethnic cleansing" (MH "Military Personnel") OR (MH "Vietnam Veterans") OR (MH "Veterans") OR "military veteran*" OR (MH "Overseas Deployment") OR (MH "Active Duty Personnel") Search modes - Boolean/Phrase
S15 (1st or first) N1 respond* Search modes - Boolean/Phrase
S14
S13
(MH "Domestic Violence") OR (MH "Dating Violence")

Search modes - Boolean/Phrase

(MH "Rape")

Search modes - Boolean/Phrase

(MH "Incest")

Search modes - Boolean/Phrase

(MH "Child Abuse, Sexual") OR (MH "Elder Abuse") OR (MH "Intimate Partner Violence") OR (MH "Child Abuse Survivors") OR (MH "Battered Men") OR (MH "Sexual Abuse") OR (MH "Child Abuse") OR (MH "Battered Women") OR (MH "Abuse Recovery: Emotional (Iowa NOC)")

Search modes - Boolean/Phrase

"complex trauma" OR (MH "Rape Trauma Syndrome (Saba CCC)") OR (MH "Post-Trauma Response (Saba CCC)") OR (MH "Multiple Trauma") OR (MH "Trauma Nursing") OR (MH "Trauma") OR (MH "Rape-Trauma Treatment (Iowa NIC)") OR (MH "Rape-Trauma Syndrome, Silent Reaction (NANDA)") OR (MH "Rape-Trauma Syndrome (NANDA)") OR (MH "Rape-Trauma Syndrome, Compound Reaction (NANDA)") OR (MH "Post Trauma Response (NANDA)") OR "cumulative trauma"

Search modes - Boolean/Phrase

(MH "Stress Disorders, Post-Traumatic") OR "posttraumatic stress disorder" OR "post traumatic stress disorder"

Search modes - Boolean/Phrase

(posttraumatic or post traumatic)

Search modes - Boolean/Phrase

N1 stress

Search modes - Boolean/Phrase

meaning making

Search modes - Boolean/Phrase

"positive change"

Search modes - Boolean/Phrase

"adversarial growth"

Search modes - Boolean/Phrase

"psychological growth"

Search modes - Boolean/Phrase

(posttraumatic or post traumatic)

Search modes - Boolean/Phrase

N1 growth

Search modes - Boolean/Phrase
Appendix C: Syntax

GET
FILE='O:\schools\MAPS\NewStat\Valentine\McCormack\Bibliometric\Ballinger\CT and PTG SPSS updated 20190809.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.

/*deleted children

SAVE
OUTFILE='O:\schools\MAPS\NewStat\Valentine\McCormack\Bibliometric\Ballinger\CT and PTG SPSS '+'updated MV031019.sav'
/COMPRESSED.

CROSSTABS
/TABLES=Gratitude Humility Forgiveness Empathy Altruism BY PubYearGroup
/FORMAT=AVVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

CROSSTABS
/TABLES=Gratitude BY PubYearGroup
/FORMAT=AVVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

CROSSTABS
/TABLES= Forgiveness BY PubYearGroup
/FORMAT=AVVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

CROSSTABS
/TABLES= PubYearGroup BY Forgiveness
/FORMAT=AVVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

FREQUENCIES VARIABLES=PubYear
/BARCHART FREQ
/ORDER=ANALYSIS.

FREQUENCIES VARIABLES=PubYearGroup
/*create a new variable call FrontlinePersonnel
FREQUENCIES VARIABLES=HealthCareWorkers
/BARCHART FREQ
/ORDER=ANALYSIS.

/*deleting variables
DELETE VARIABLES HealthCareWorkers.
EXECUTE.

/*create new combined variables
COMPUTE FrontlinePersonnel=HumanitarianWorkers + Nurses + Police + Paramedics.
EXECUTE.

FREQUENCIES VARIABLES=FrontlinePersonnel
/BARCHART FREQ
/ORDER=ANALYSIS.

DELETE VARIABLES SP_Iran1.
EXECUTE.

DELETE VARIABLES SP_Nepal1.
EXECUTE.

COMPUTE DomesticViolence2=DomesticViolence + IPV.
EXECUTE.

/* research question: Study type
FREQUENCIES VARIABLES=PublicationClassification
/BARCHART FREQ
/ORDER=ANALYSIS.

CROSSTABS
/TABLES=PublicationClassification BY PubYearGroup
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

/*research question: Country of research institution
CROSSTABS
COMPLEX TRAUMA AND POSTTRAUMATIC GROWTH

/*research question: Country of participants

CROSSTABS
/TABLES=SP_Australia SP_BandH SP_Canada SP_Congo1 SP_Denmark1 SP_ElSalv1
SP_Georgia1 SP_Germany1 SP_Israel1 SP_Italy1 SP_Jordan1 SP_Kosovo1 SP_Liberia1
SP_NZ1 SP_NorthernIreland1 SP_Norway1 SP_NotSpecified1 SP_Palestine1 SP_Poland1
SP_Rwanda1 SP_SierraLeone1 SP_Slovakia1 SP_SouthAfrica1 SP_TheNetherlands1
SP_ThePhilippines1 SP_Turkey1 SP_UK1 SP_USA1 SP_NoPopulation1 SP_Greece1
SP_Slovenia1 BY PubYearGroup
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

COMPUTE
SP_Other=SP_BandH+SP_Canada+SP_Congo1+SP_Denmark1+SP_ElSalv1+SP_Georgia1+
SP_Germany1+SP_Italy1+SP_Jordan1+SP_Kosovo1+SP_Liberia1+SP_NZ1+SP_Northern
Ireland1+SP_Norway1+SP_NotSpecified1+SP_Palestine1+SP_Poland1+SP_Rwanda1+SP_
SierraLeone1+SP_Slovakia1+SP_SouthAfrica1+SP_TheNetherlands1+SP_ThePhilippines1+
SP_Turkey1+SP_Greece1+SP_Slovenia1+SP_NoPopulation1.
EXECUTE.

/*research question: trauma type

CROSSTABS
/TABLES=ChildhoodSexualTrauma ChildhoodTrauma InstitutionalisedCare
DomesticViolence2 MilitarySexualTrauma FrontlinePersonnel1 CommunityViolence
PoliticalPrisoner Genocide IDPs Refugee Terrorism Torture POW SexTrafficking
SexualViolence WarVeterans WarCivilians BY PubYearGroup
/FORMAT=AVALUE TABLES
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/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

/*research question: domains of growth

CROSSTABS
/TABLES=Gratitude Humility Forgiveness Empathy Altruism BY PubYearGroup
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/*research question: language use around trauma
CROSSTABS
/TABLES=DiagnosisPreviousToStudyReported DiagnosticScreeningUsed DistressReported LabelOfTrauma BY PubYearGroup
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ
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/*research question: frequency of publications in each year
FREQUENCIES VARIABLES=PubYear
/BARCHART FREQ
/ORDER=ANALYSIS.

DELETE VARIABLES R_Other.
EXECUTE.

COMPUTE R_Other=R_BandH + R_Canada + R_China + R_Denmark + R_Finland +
R_Georgia + R_Germany + R_Iran + R_Ireland + R_Kenya + R_Mexico + R_NZ +
R_NorthernIreland + R_Norway + R_Palestine + R_Poland + R_Slovakia + R_SouthAfrica +
R_Switzerland + R_TheNetherlands + R_ThePhilippines + R_Turkey + R_Slovenia +
R_Greece + R_Other.
EXECUTE.

COMPUTE TraumaType_Other=ChildhoodTrauma + InstitutionalisedCare +
DomesticViolence2 + MilitarySexualTrauma + FrontlinePersonnel1 + CommunityViolence +
PoliticalPrisoner + Genocide + IDPs + Terrorism + Torture + POW + SexTrafficking +
SexualViolence.
EXECUTE.

CROSSTABS
/TABLES=R_Australia R_Israel R_UK R_USA R_Other BY ChildhoodSexualTrauma
Refugee WarVeterans WarCivilians TraumaType_Other BY PubYearGroup
/FORMAT=AVALUE TABLES
/STATISTICS=CHISQ
/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
/COUNT ROUND CELL.

CROSSTABS
/TABLES=SP_USA1 SP_Israel1 SP_UK1 SP_Australia SP_Palestine1 SP_Other BY PubYearGroup
/FORMAT=AVALUE TABLES
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CROSSTABS
/TABLES=LabelOfTrauma BY DistressReported
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/FORMAT=AVVALUE TABLES
/STATISTICS=CHISQ
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/COUNT ROUND CELL.

CROSSTABS
/TABLES=R_Australia R_Israel R_UK R_USA R_Other BY ChildhoodSexualTrauma
Refugee WarVeterans WarCivilians TraumaType_Other
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CROSSTABS
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/CELLS=COUNT EXPECTED ROW COLUMN TOTAL
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## Appendix D: Types of Trauma

Types of trauma studied in each time period. In brackets is the percentage of total publications within that time period.

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<td><strong>Childhood Sexual Trauma</strong></td>
<td>0</td>
<td>4 (16.0%)</td>
<td>19 (16.4%)</td>
<td>23 (16.3%)</td>
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<tr>
<td><strong>Childhood Trauma</strong></td>
<td>0</td>
<td>1 (4.0%)</td>
<td>12 (10.3%)</td>
<td>13 (9.2%)</td>
</tr>
<tr>
<td><strong>Community Violence</strong></td>
<td>0</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td><strong>Domestic Violence</strong></td>
<td>0</td>
<td>4 (16.0%)</td>
<td>9 (7.8%)</td>
<td>13 (9.2%)</td>
</tr>
<tr>
<td><strong>Genocide</strong></td>
<td>0</td>
<td>0 (0%)</td>
<td>4 (3.4%)</td>
<td>4 (2.8%)</td>
</tr>
<tr>
<td>Internally Displaced Persons</td>
<td>0</td>
<td>0 (0%)</td>
<td>2 (1.7%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>Institutionalised Care</td>
<td>0</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td><strong>Terrorism</strong></td>
<td>0</td>
<td>2 (8.0%)</td>
<td>1 (0.9%)</td>
<td>3 (2.1%)</td>
</tr>
<tr>
<td><strong>Military Sexual Trauma</strong></td>
<td>0</td>
<td>0 (0%)</td>
<td>2 (1.7%)</td>
<td>2 (1.4%)</td>
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<tr>
<td><strong>Political Prisoner</strong></td>
<td>0</td>
<td>2 (8.0%)</td>
<td>0 (0%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td><strong>Refugees</strong></td>
<td>0</td>
<td>5 (20.0%)</td>
<td>10 (8.6%)</td>
<td>15 (10.6%)</td>
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<tr>
<td><strong>Prisoner of War</strong></td>
<td>0</td>
<td>3 (12.0%)</td>
<td>4 (3.4%)</td>
<td>7 (5.0%)</td>
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<tr>
<td><strong>Sex Trafficking</strong></td>
<td>0</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td><strong>Sexual Violence</strong></td>
<td>0</td>
<td>2 (8.0%)</td>
<td>4 (3.4%)</td>
<td>6 (4.3%)</td>
</tr>
<tr>
<td><strong>Torture</strong></td>
<td>0</td>
<td>5 (20.0%)</td>
<td>1 (0.9%)</td>
<td>6 (4.3%)</td>
</tr>
<tr>
<td><strong>War Veterans</strong></td>
<td>0</td>
<td>4 (16.0%)</td>
<td>48 (41.4%)</td>
<td>52 (36.9%)</td>
</tr>
<tr>
<td><strong>War Zone Civilians</strong></td>
<td>0</td>
<td>2 (8.0%)</td>
<td>15 (12.9%)</td>
<td>17 (12.1%)</td>
</tr>
<tr>
<td><strong>Frontline Personnel</strong></td>
<td>0</td>
<td>4 (16.0%)</td>
<td>10 (8.6%)</td>
<td>14 (9.9%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>25 (17.7%)</td>
<td>116 (82.3%)</td>
<td>141 (100%)</td>
</tr>
</tbody>
</table>
### Appendix E: Publications by Country of Research Institution

<table>
<thead>
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<th>Country Of Institution</th>
<th>2005-2008</th>
<th>2015-2018</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3 (12.0%)</td>
<td>6 (5.2%)</td>
<td>9 (6.4%)</td>
</tr>
<tr>
<td>Bosnia and Herzegovina Canada</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Canada</td>
<td>2 (8.0%)</td>
<td>3 (2.6%)</td>
<td>5 (3.5%)</td>
</tr>
<tr>
<td>China</td>
<td>0 (0%)</td>
<td>2 (1.7%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>Denmark</td>
<td>0 (0%)</td>
<td>4 (3.4%)</td>
<td>4 (2.8%)</td>
</tr>
<tr>
<td>Finland</td>
<td>2 (8.0%)</td>
<td>0 (0%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>Georgia</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Germany</td>
<td>0 (0%)</td>
<td>3 (2.6%)</td>
<td>3 (2.1%)</td>
</tr>
<tr>
<td>Israel</td>
<td>4 (16.0%)</td>
<td>15 (12.9%)</td>
<td>19 (13.5%)</td>
</tr>
<tr>
<td>Italy</td>
<td>0 (0%)</td>
<td>2 (1.7%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>Kenya</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Mexico</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1 (4.0%)</td>
<td>0 (0%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Norway</td>
<td>1 (4.0%)</td>
<td>3 (2.6%)</td>
<td>4 (2.8%)</td>
</tr>
<tr>
<td>Palestine</td>
<td>2 (8.0%)</td>
<td>2 (1.7%)</td>
<td>4 (2.8%)</td>
</tr>
<tr>
<td>Poland</td>
<td>0 (0%)</td>
<td>2 (1.7%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>Slovakia</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>South Africa</td>
<td>0 (0%)</td>
<td>3 (2.6%)</td>
<td>3 (2.1%)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>0 (0%)</td>
<td>2 (1.7%)</td>
<td>2 (1.4%)</td>
</tr>
<tr>
<td>The Philippines</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Turkey</td>
<td>0 (0%)</td>
<td>4 (3.4%)</td>
<td>4 (2.8%)</td>
</tr>
<tr>
<td>Country</td>
<td>First Period</td>
<td>Second Period</td>
<td>Third Period</td>
</tr>
<tr>
<td>---------</td>
<td>--------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>UK</td>
<td>1 (4.0%)</td>
<td>11 (9.5%)</td>
<td>12 (8.5%)</td>
</tr>
<tr>
<td>USA</td>
<td>14 (56.0%)</td>
<td>72 (62.6%)</td>
<td>86 (61.4%)</td>
</tr>
<tr>
<td>Slovenia</td>
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<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Greece</td>
<td>0 (0%)</td>
<td>1 (0.9%)</td>
<td>1 (0.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>116</td>
<td>141</td>
</tr>
</tbody>
</table>

*Note:* Percentage indicates the percentage of publications within each time period.