# The Experience of Post Traumatic Growth in Adjusting to Spinal Cord Injury: The Role of Social Processes and Relationships

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**Doctorate of Clinical Psychology (DClinPsy)**

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# Preface

Acquiring a spinal cord injury (SCI) can have substantial physical, social, and psychological impacts on the individual, requiring the individual to make significant adjustments and deal with multiple losses and challenges. Research shows the potential for individuals to experience positive psychological changes in adapting to these challenges. This has attracted research interest in application of models of post traumatic growth (PTG) to the field of SCI. PTG is defined as positive psychological changes resulting from the struggle with traumatic or highly stressful life circumstances. The predominant model of PTG proposes that trauma represents a significant disruption to life goals and core beliefs about self, world, and others, triggering cognitive processes as the individual attempts to make sense of their experience and rebuild core beliefs. PTG is seen as resulting from the rebuilding of core beliefs. Research supports these processes and experiences of growth following SCI.

Several studies show the role of social support and social factors in the development of PTG; however there has been an overfocus on individual factors (such as individual resilience) in the field which hinders understanding of how social processes might support or hinder the development of PTG following SCI. This thesis aimed to address this through systematic review and synthesis of the current research base and empirical study of social relationships and processes as part of the lived experience of PTG in SCI, to add to the research base and provide implications for clinical practice.

Paper one is a systematic review which examines the social processes involved in the development PTG following SCI. Searches identified nine relevant studies and a meta-ethnographic approach generated four themes: Sense of Self and Identity; Close Relationships as Enablers of Growth; Connecting with the Peer Community; and Reintegrating into Society. The review identified identity reconstruction as a central pathway in the development of PTG. SCI was shown to represent a threat to identity due to imposing a new forced disabled identity, demanding processing of beliefs about disability and requiring the individual to make sense of its impact on self and relationships. This was shown to trigger cognitive and behavioural processes as the individual explored and reconstructed beliefs about disability, acceptance and belonging the in the context of their relationships and social world. The review indicated

individuals are able to reconstruct a positive self-identity when they are able to challenge previously held narratives about disability and generate ideas about how disability can be integrated into personal identity. Close relationships and peers were found to play a multi-faceted role in enabling identity reconstruction and promoting the cognitive and behavioural processes of PTG. The findings are limited by a relatively small research base, highlighting the need for further research. Specifically, the review highlighted the need for research examining the role of support from others in the development of PTG following SCI.

Paper two is an empirical study exploring the lived experience of PTG with 11 individuals living with SCI using a qualitative approach. The aim of the research was to understand the role of interactions and relationships with close others and peers, and how this influences cognitive processing, in the development of PTG. Semi-structured interviews were conducted and analysed using a Social Constructivist Grounded Theory approach. The results showed how SCI can disrupt beliefs about self, others, and world, which had the potential to disrupt self-identity. This triggered cognitive and behavioural re-evaluation processes to rebuild beliefs, and in turn experience PTG. Three inter-related themes of how relationships support these processes were revealed: a safe place to get back on your feet, accepting and valuing me, and enabling learning and independence. Therefore, highlighting the role relationships and interactions with peers have in promoting safety, acceptance, and enablement, as contributory to PTG. Relationships and interactions could function to enable the processes of PTG through the provision of support, as well as influence the rebuilding of beliefs in the implicit meaning that was taken from interactions. The study provided implications for clinical practice for individual, familial and systemic interventions, and in the importance of promoting learning opportunities from peers. The study brought into question the applicability of the predominant model of PTG for the context of acquired disability, suggesting the need for further theory testing and potential revision in this context.

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**Social Processes in the Development of Post Traumatic Growth Following Spinal Cord Injury: A Systematic Review and Meta-ethnography.**

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**Abstract**

The review aimed to examine social processes involved in the development of post traumatic growth (PTG) following spinal cord injury (SCI). Systematic review of the literature identified nine relevant studies. A meta-ethnographic approach generated four themes: Sense of Self and Identity; Close Relationships as Enablers of Growth; Connecting with the Peer Community; and Reintegrating into Society. Identity reconstruction was found to be a central pathway in PTG. Identity reconstruction was shown to occur in the context of the individuals' relationships and social world as they explore and reconstruct beliefs about disability, acceptance and belonging. Close relationships and peers played a multi-faceted role in enabling identity reconstruction and promoting cognitive and behavioural processes of PTG. The review highlights the importance of considering how identity is being reconstructed within the context of relationships in SCI rehabilitation. The findings are limited by a relatively small research base, and further research is required.

**Key Words**

**Introduction**

Spinal cord injury (SCI) can be life changing (Bonanno et al., 2012) often resulting in long-term disability (Richardson et al., 2021). SCI is caused by damage to the spinal cord or nerves which results in permanent paralysis of voluntary muscles and loss of sensation below the injury level (Ahuja et al., 2017). This can be caused by external physical impact (motor accidents, falls, sports, or violence), referred to as traumatic SCI, or disease and infection, referred to as non-traumatic SCI (Noonan et al., 2013). In the UK, the main causes of SCI are traumatic injuries (National Institute for Health and Care Excellence, NICE, 2016). Figures estimate 40,000 people to be living with SCI in the UK, with figures indicating approximately 1000 people acquire a new SCI each year (NICE, 2016). Statistics from the charity sector estimate this figure to be higher, approximating incidence to be 2500 each year (Spinal Injury Association, 2021).

SCI often brings about substantial physical, social, and psychological consequences for the individual (Ahuja et al., 2017). Not only are individuals required to adapt to considerable physical changes in mobility and function and manage multiple physical health complications (Ahuja et al., 2017), they also face psycho-social losses and challenges, including loss of independence, sense of personal control, social roles and status, and identity (Dickson et al., 2008). A series of studies have shown how SCI can result in 'biographic disruption' to life narrative, requiring the individual to process the impact of the SCI on their beliefs and concept of personal identity and to integrate this with the disabled self, often in the context of stigma and discrimination (Dickson et al., 2008; Bourke et al., 2014).

Research shows SCI can have implications for psychological health and wellbeing. In a review by Dijkers (2005), people with SCI were found to report lower levels of wellbeing and quality of life than nondisabled people. SCI has also been linked to poorer mental health outcomes. A systematic review by Craig et al. (2009) reported approximately 30% of people with SCI are at risk of experiencing a depressive disorder and 40% an anxiety disorder. More recent findings from a questionnaire study by Wang et al. (2018) showed similar outcomes, with 35%, 29%, and 27% of 300 SCI participants exceeding the clinical cut-off score for PTSD, anxiety, and depression, respectively. Both studies

revealed higher incidence of mental health morbidity than that of the general population, suggesting individuals with SCI are at increased risk of mental health difficulties. Despite this, these studies show negative outcomes are not inevitable, with most participants not showing clinically significant signs of distress or poor mental health. Moreover, many individuals living with SCI report experiencing good quality of life (Pershouse et al., 2012; Shah et al.,2017). In fact, the potential for individuals to experience positive psychological changes associated with the process of adapting to SCI has attracted research interest in application of models of post traumatic growth (Wang et al., 2017; January et al., 2015; Byra, 2016).

*Post Traumatic Growth Theory*

The term post traumatic growth (PTG) was first coined by Tedeschi and Calhoun in the mid-1990s (Tedeschi and Calhoun, 1995). Calhoun and Tedeschi (2001) define PTG as positive psychological changes resulting from the struggle with traumatic or highly stressful life circumstances. PTG is seen as change that goes beyond what was present before the struggle (Tedeschi and Calhoun, 2004). Several theories of PTG are available in the literature (Joseph and Linley, 2005; Schaefer and Moos, 1992; Zoellner and Maercker, 2006). However, Tedeschi and Calhoun's (2004) model is the most validated model (Hallam and Morris, 2014; Taku et al., 2008; Taku et al., 2021), and may have utility in relation to SCI (Kunz et al., 2019).

Within Tedeschi and Calhoun's model, trauma is seen as presenting a major disruption to life goals and core beliefs about the world, others, and self (Calhoun et al., 2010; Tedeschi et al., 2018). Challenge to core beliefs results in the experience of emotional distress and requires considerable rebuilding of cognitive infrastructure (Tedeschi et al., 2018). These experiences initiate cognitive rumination processes as the individual searches for meaning and attempts to make sense of their experiences (Tedeschi et al., 2018). Through this process the individual is thought to develop a revised core belief system, which integrates their new experiences and can lead to PTG (Tedeschi et al., 2018).

PTG is proposed as occurring in five main domains: 1) appreciation of life; 2) sense of priorities; 3) relationships; 4) sense of personal strength; and 5) recognition of new possibilities and spiritual development (Tedeschi and Calhoun, 2004). PTG can also occur in personal narrative, whereby an

individual redefines their life narrative based on learning and self-reflection from struggling with trauma (Tedeschi et al., 2018).

*Post Traumatic Growth and Spinal Cord Injury*

Unsurprisingly, there has been interest in PTG in the field of SCI, with numerous studies confirming the potential for PTG associated with adjustment to SCI (Wang et al., 2017; January et al., 2015; Chun and Lee, 2008; Kennedy et al., 2013; Byra, 2016). Studies have found most people experience at least one positive change following SCI (Wang, et al., 2017; January et al., 2015). Wang et al. (2017) found 99% of questionnaire respondents recognised at least one positive change and 51% reported moderate to high levels of PTG. PTG has been found to be experienced in many areas following SCI, including strengthened connections, recognition of personal strengths, appreciation for life and increased spiritually (Chun and Lee, 2008; Kennedy et al., 2013). A questionnaire study by Byra (2016) confirmed the potential of growth across all five domains proposed by Tedeschi and Calhoun (2004).

Studies have looked at the processes through which individuals might experience PTG following SCI. Davis and Novoa (2013) examined the impact of meaning making (cognitive processes of searching for and finding meaning following trauma), wellbeing and growth with 67 participants across 13months following injury. Finding meaning was associated with greater perceived growth, suggesting cognitive processes related to meaning making may be one mechanism for PTG following SCI. Further research from January et al. (2015) found individuals who reported greater engagement in cognitive (positive reframing and acceptance) and behavioural (active coping and use of instrumental support) coping were more likely to report higher levels of PTG. Additionally, Kunz et al. (2018, 2019) found flexible use of active and avoidance coping, according to the situational demands, predicted PTG following SCI but suggested methodological considerations apply to the time since SCI to facilitate reliable measurement.

The research highlights the role of cognitive processing and coping in the development of PTG following SCI. However, the field appears to be dominated by research on individual factors in the development of PTG with little interest paid to social factors. Yet, the social environment is thought to play an important role in how individuals process, make sense of, and cope with traumatic events or

chronic stressors (Wilcox, 2010; Cohen and Wills, 1985). Thus, social factors and processes are likely to be important in PTG processes following SCI.

*Social Processes in the Development of Post Traumatic Growth*

Calhoun and Tedeschi (2010) recognise the role of socio-cultural factors, including the individual social environment (friends, families, neighbours, communities) and broader societal narratives, in the experience of PTG. Social support is seen as a major facilitator of PTG (Tedeschi and Calhoun, 2004, 2008). The model places emphasis on the role of social support in facilitating self-disclosure. This is felt to be important for alleviating emotional distress and enabling cognitive processing. It is also proposed as directly promoting growth in relationships due to increasing intimacy and closeness (Tedeschi and Calhoun, 2018).

Several studies support the role of social support in the development of PTG following numerous physical health experiences (Ghannad et al., 2018; Rahimi et al., 2016; Schroevers et al., 2010). Ghannad et al.'s, (2018) study of predictors of positive psychological outcomes in a sample of 157 participants with SCI found family support to be the most important predictor of PTG and friend support as the most important for life satisfaction. The study did not offer substantial insights as to how support might influence the experience of PTG; however further insights can be generated from qualitative studies. Khanjani et al. (2017) found instrumental support to be important in helping individuals overcome primary problems and experience success, thus enabling growth. Additionally, Griffiths and Kennedy (2012) found support and encouragement from others supported coping and beliefs about self.

Engagement and support from role models, individuals who have overcome similar life experiences, are also elements of the PTG model (Tedeschi and Calhoun, 2018). Role models are felt to be able to provide additional opportunities for self-disclosure, and constructive support and advice, which can promote coping and enable the development of new schemas. Peer support has been found to be a facilitator of PTG following SCI in qualitative research by providing advice and support for coping and changing attitudes toward their injury through social comparison (Khanjani et al., 2017; Chun and Lee, 2013).

Finally, culture and societal narratives are also proposed to be relevant to the experience of PTG (Tedeschi et al., 2018). Whether PTG is transculturally valid has recently been questioned within the field due to much of the research and thinking coming from Western countries, most prominently from North America (Calhoun et al., 2010; Splevins et al., 2010). However, there is growing evidence to show that PTG is universally experienced across cultures (Weiss and Berger, 2010). Tedeschi et al. (2018) emphasise how culture and social narratives are likely to influence the experience of PTG. Aspects of an individual's identity and core beliefs are defined by different aspects of their culture, including age, disability, religion, ethnicity, social status, and sexual orientation. Thus, how an individual makes sense, adapts and builds meaning post trauma is highly likely to be influenced by culture. Calhoun et al (2010) discuss this in relation to cultural and societal views about the meaning and purpose of suffering, coping and growth. Religious influences about meaning making regarding suffering are argued as being intertwined with cultural and societal views. Thus, cross-cultural differences in these views are proposed as being likely to impact on the meaning an individual might make in the face of difficult life events, and thus how an individual experiences PTG. Social stereotypes about disability, and the impact these have on an individual's inter- and intra-personal experiences (such as identity and self-esteem) are argued to be especially important in the context of adjustment to physical disability (Dickson et al., 2008; Silverman and Cohen, 2014). However, how these factors might influence PTG following SCI is not currently well defined.

*Aims of Present Systematic Review*

Growing research demonstrates the role of social processes in PTG development. Despite this, the mechanisms through which social processes might support or hinder the development of PTG following SCI are not currently well established. Systematically reviewing qualitative studies in this area would potentially address current gaps in the literature. Thus, the aims of review are:

1) To synthesis and critically appraise research exploring the experience of PTG following SCI;

2) To derive insights into the social processes that enable or undermine the development PTG;

3) To establish recommendations for clinical practice in terms of adjustment to SCI.

**Method**

The review was registered on PROSPERO, the international prospective register of systematic reviews (reference CRD42021253502).

*Search Strategy*

The databases PsycINFO, MEDLINE, Scopus, Citation Index of Nursing and Allied Health Literature (CINAHL), Web of Science and EMBASE were searched individually for published studies in August 2021. The databases were searched using synonyms of spinal cord injury (spinal cord injuries, spinal cord injur*, hemiplegia, paraplegia, quadriplegia, paraplegi*, quadriplegi*, hemiplegi*, tetraplegi*, spinal trauma, spinal injur*) and post traumatic growth (posttraumatic growth, post traumatic growth, personal growth, personal gain*, meaning making, self growth, benefit finding, gratitude, positive psychological change, positive change, positive outcome*, positive experience*, post traumatic depreciation or posttraumatic depreciation). Date limits were not applied to allow a comprehensive search of this relatively specialist research area. A librarian specialist was consulted, and all authors agreed the search strategy.

*Inclusion and Exclusion Criteria*

Studies which fulfilled the following criteria were included in the review: 1) published in a peer-reviewed journal; 2) published in English; 3) sample consisted predominately of individuals who had acquired SCI in adulthood (16 years or over in line with clinical practice in SCI rehabilitation settings); 4) employed a qualitative methodology; 5) investigated PTG or provided conceptual data relevant to PTG; 6) provided knowledge of relevant social processes (e.g. peer support, social comparison, social support) in the development of PTG.

Studies were excluded if the majority of participants 1) had been interviewed less than one year post injury; 2) had sustained SCI in childhood; or 3) if the study concerned the experience of SCI in childhood. Kunz et al. (2019) suggested reports of PTG in early stages of SCI could represent an illusory effect.

*Study Selection*

Identified studies were transferred into Endnote, where duplicates were removed. Titles and abstracts were initially screened for eligibility. Full texts were then comprehensively reviewed to assess eligibility based on inclusion and exclusion criteria. Where there was ambiguity regarding inclusion articles were reviewed by the research supervisor before agreement was reached on the final list of studies by the research team. Finally, the reference lists of the agreed studies were searched for additional references.

*Quality Appraisal Process*

Studies were assessed using the Critical Appraisal Skills Programme (CASP) Qualitative Studies Checklist (2018). The tool was chosen as it is widely applied (Dalton et al., 2017), user-friendly for novice researchers (Hannes et al., 2017), and endorsed by Cochrane (Noyes et al., 2018). The CASP tool provides ten questions to help researchers review the validity, credibility, and relevance of qualitative studies (CASP, 2018). Studies are given a "Yes", "No" or "Can't tell" rating to establish whether they meet the quality criteria. "Can't tell" is used to reflect partial meeting of criteria and/or insufficient information to make a judgement (Long et al., 2020). To enable cross-comparison, studies were given a score out of 20 (Yes = 2, Can't tell = 1, No = 0) for overall quality. Higher scores represented higher methodological quality.

Studies were not excluded based on quality, as methodological quality does not necessarily reflect the value and potential contribution of the study to review aims (Garside, 2014; Carroll et al., 2012). Excluding articles based on quality can come with a risk of missing meaningful findings that could provide new insights or strengthen themes across the review (Garside, 2014; Carroll et al., 2012). Additionally, low CASP ratings can also be caused by insufficient information provision to meet tool criteria rather than methodological quality (Garside, 2014). Therefore, quality appraisal was used to consider the strengths and weakness of each study, rather than to make inclusion decisions.

A selection of five articles were independently assessed for CASP quality to establish inter-rater reliability. Inter-rater agreement was 74% with a kappa score of 0.42, representing a moderate level of agreement between reviewers (Altman, 1999). Consideration was given to pursuing inter-rater

reliability for all studies, but as good agreement was achieved after five studies were independently appraised the approach was deemed sufficiently confirmatory of appropriate application of the CASP tool by the first author.

*Data Synthesis*

A meta-ethnography approach (Noblit and Hare, 1998) was chosen to combine and analyse the data derived from the search outcomes. A meta-ethnographic approach allows the researcher to re-interpret conceptual data created by the original authors to produce new conceptual theories that help to capture the data (France et al., 2016). Thus, this approach was chosen as the aims of the review were to develop analytical findings about the processes involved in PTG rather than to provide descriptive findings of previous studies.

The meta-ethnography was conducted based on the steps provided by Noblit and Hare (1988) using guidance from Sattar et al. (2021). The process is summarised in table 1.

**Table 1.** *Process of Meta-ethnography*

| Phase | Process |
|---|---|
| 1) Getting started | The topic of interest was chosen based on identified gaps in knowledge in the existing literature, and value for clinical practice. |
| 2) Deciding what is relevant to the initial interest | The search strategy was developed and conducted. Decisions about inclusion were made. Quality assessment was completed. |
| 3) Reading the studies | The main researcher become familiar with the data by thoroughly reading the studies and making sense of the findings. The raw data from the studies was extracted into a data extraction form (Appendix F), adapted from Sattar et al. (2021). Raw data included first order (participants quotations) and second order constructs (primary authors interpretations such as themes or concepts). The data was extracted verbatim to reduce |

the risk of losing important data (Atkins et al., 2008). A separate form was used to extract information about study characteristics.

| | |
|---|---|
| 4) Determining how the studies are related | To understand the relationship between the key concepts in different papers a list of themes was created from the studies (Appendix G). These were compared against each other to identify common and recurring concepts and recognise difference across the studies. The themes were clustered into categories of similar concepts and ideas. |
| 5) Translating the studies into one another | This phase involved comparing the metaphors and concepts in one account to those of another. The studies were arranged chronologically. The themes and concepts from paper 1 were summarised, followed by paper 2. Similarities, contributions, and differences between the two papers were noted (Atkins et al., 2008). The papers were then looked at in turn with the same process (Appendix H). A translation table was created to support this process (Appendix I); adapted from Sattar et al. (2021). The researcher also kept a journal to remain aware of their theoretical position. |
| 6) Synthesising translations | Reciprocal translation synthesis was conducted as the studies were deemed sufficiently similar in their accounts (Sattar et al., 2021). Third order constructs were generated by reading the primary data synthesis alongside the translations table and drawing out the main points to form the reciprocal translations (Sattar et al., 2021). Line of argument synthesis was then conducted by looking across the third order constructs to explore the relationship between themes and creating a diagrammatic model (Appendix K) (Sattar et al., 2021; Cahill et al., 2018). |
| 7) Expressing the synthesis | A narrative of the proposed synthesis was written; themes were refined during this process. |

**Results**

Databases searches yielded 1023 records. Removal of duplicates resulted in 444 records for screening. Initial abstract screening resulted in 391 records being removed and 52 remaining records for full text screening. Application of inclusion and exclusion criteria resulted in removal of 43 studies and inclusion of 9 studies in the review. Review of reference lists of included studies revealed no further studies for inclusion.

**Figure 1.**

*PRISM Flow Diagram Demonstrating Study Selection Process (Page et al., 2020).*
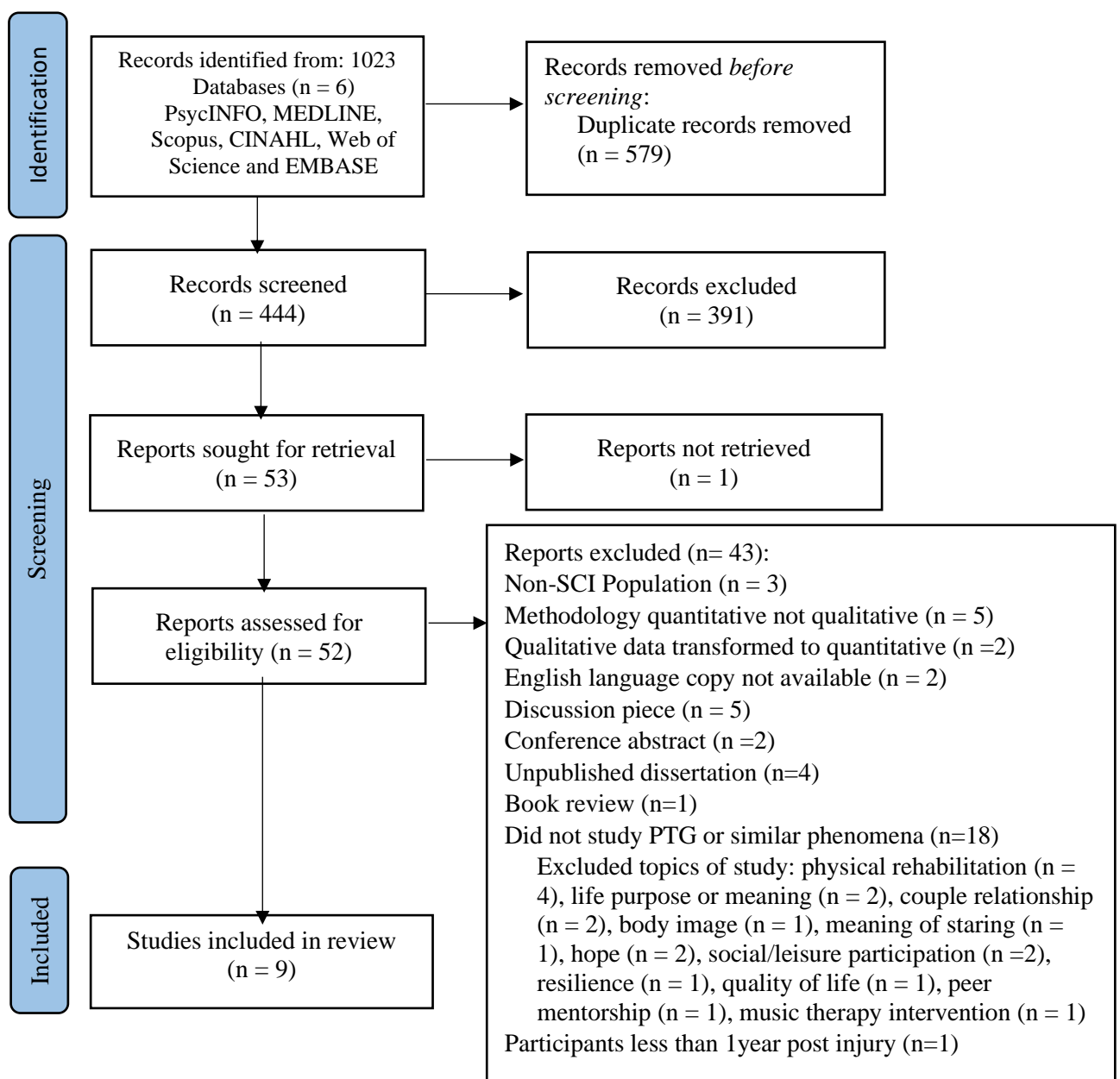
**Study Characteristics**

Nine studies, published between 2008 and 2017, were included. Studies explored 278 participants' experiences of SCI within seven countries: USA (4), Canada (1), UK (2), Germany (1), Netherlands (1), Iran (1) and China (1). Chun and Lee's (2008, 2010, 2013) articles used the same participant pool and thus participants from these studies were included in the total calculation only once. The age range of participants was 18 and 79 years. Of the nine studies, seven provided information about gender, showing 39 participants were male and 26 were female (information was missing from Crawford et al. (2014) and Kennedy et al. (2013)). Eight studies provided information regarding time since injury. Six studies interviewed participants at least one year post injury. Kennedy et al. (2013) interviewed participants at four time points (6 weeks, 12 weeks, 1 year and 2 years). Lijotti et al. (2016) interviewed participants between 9- and 24-months post-SCI. Crawford et al. (2014) did not provide this information. Overall, interviews ranged from 6 weeks to 34 years post SCI.

The majority of participants were over 16 years when they sustained SCI. Three studies (Griffiths and Kennedy, 2012; Kennedy et al., 2013; Lijotti et al., 2016) excluded participants under the age of 16 at injury. Chun and Lee's (2008, 2010, 2013) studies included two participants who sustained their SCI in childhood (14 or 15 years) and Khanjani et al. (2017) and Wang et al. (2017) each included one such participant. Crawford et al. (2014) did not provide this information. From the information provided age of injury appeared to range from 7 to 78 years.

Most studies (6/9) recruited from rehabilitation centres, apart from Crawford et al. (2014) who recruited from para-sports programmes and Griffiths and Kennedy (2012) who recruited from community samples. Khanjani et al. (2017) did not provide this information. Interviews were utilised by eight studies for data collection. Crawford et al (2014) used interview and survey methods and Kennedy et al. (2013) used questionnaires and written disclosures. Data analysis methods included thematic analysis (4), IPA (2), content analysis (2) and grounded theory (1).

**Table 2.** *Study Characteristics*

| Author | Title | Country | Aim | Recruitment Setting | Participant Characteristics | Data Collection & Analysis Methods | Key Findings, themes |
|---|---|---|---|---|---|---|---|
| Chun & Lee (2008) | The experience of posttraumatic growth for people with spinal cord injury. | USA | To explore the characteristics of PTG for people with spinal cord injury. | Former and current clients of rehabilitation hospitals. | 15 (Including 2 negative cases) 10 male & 5 female, 27-58 years, 1-34 years post injury, age of injury 14-57 years. | Individual interviews Thematic analysis based on grounded theory methodology (Strauss & Corbin, 1998; Boyatzis, 1998) | The experience of meaningful family relationships The experience of meaningful engagement An appreciation of life |
| Chun & Lee (2010) | The role of leisure in the experience of posttraumatic growth for people with spinal cord injury. | USA | To explore the role of leisure in the experience of PTG for people with SCI. | Former and current clients of rehabilitation hospitals. | 15 (Including 2 negative cases) 10 male & 5 female, 27-58 years, 1-34 years post injury, age of injury 14-57 years. | Individual Interviews Thematic analysis based on grounded theory methodology (Strauss & Corbin, 1998; Boyatzis, 1998) | Providing opportunities to discover unique abilities and hidden potential Building companionship and meaningful relationships Making sense of traumatic experience and finding meaning in everyday life Generating positive emotions. |

| Griffiths & Kennedy (2012) | Continuing with life as normal: positive psychological outcomes following spinal cord injury. | UK | How do individuals describe their positive outcomes? What processes do people go through in order to achieve these positive outcomes? | Individuals with SCI in the community | 6 Participants including 4 male & 2 female. Aged between mid 20s and mid 60s, between 2 and 11 years post injury | Semi-structured interviews IPA (Smith, Flowers & Larkin, 2009) | Living a Normal Life, Just Doing Things Differently Overcoming Challenges: Determination to Succeed Using the resources available to me |
|---|---|---|---|---|---|---|---|
| Kennedy, Lude, Elfstrom & Cox (2013) | Perceptions of gain following spinal cord injury: a qualitative analysis. | Europe - UK & Germany | To explore the ways in which people perceive that they have benefitted positively from the experience of SCI | Specialist units in British and German SCI centres. | 201 Participants between the age of 18-74 years, sustained injury between 16 and 73. | Open ended question asked at 4 time points post injury (6 weeks, 12 weeks, 1 year, and 2 years) Thematic Analysis | Relationships Appreciation of relationships Perspective and appreciation of life New goals or priorities Understanding of SCI or disability Appreciation of health or health care Changed personality Opportunity or challenge Knowledge of SCI or body Newly acquired skills Spirituality Acceptance Nothing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Chun & Lee (2013) | I am just thankful: the experience of gratitude following traumatic spinal cord injury | USA | To explore the experience of gratitude in everyday life following traumatic SCI. | Former and current clients of rehabilitation hospitals. | 15 (including 2 negative cases) 10 male& 5 female. Aged between 28 and 58. Average onset injury 30 (range 14-57). Average length of time since injury 10.7years (range 1-34 years). | Individual interviews Thematic analysis based on grounded theory methodology (Strauss & Corbin, 1998; Boyatzis, 1998) | Gratitude for everyday life, Gratitude for family support, Gratitude for new opportunities Gratitude for a positive sense of self and Gratitude to God |
| Crawford, Gayman & Tracey (2014) | An examination of post-traumatic growth in Canadian and American ParaSport athletes with acquired spinal cord injury. | Canada & USA | Does participation in ParaSport following acquired SCI influence people's perceptions of PTG? What specific dimensions of PTG, if any, do ParaSport athletes report experiencing? | Parasports in Canada or USA. | 12 Participants aged between 24 and 55. Mean age at which participant acquired SCI was 23 and mean time since SCI was 18.83years. | Survey and semi-structured phone interview Content analysis using an interpretational analysis guided by Tesch (1990) | Injury relevant processing Appreciation for life Reactive behaviour as a result of attempted integration into ParaSport Relating to others Health and well-being |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Littooij, Widdershoven, Stolwijk-Swtickste, Doodeman, Leget & Dekker (2016) | Global meaning in people with spinal cord injury: Content and changes. | Netherlands | To explore the content of global meaning of people with SCI, and to explore whether or not global meaning changes after SCI. | Outpatients of rehabilitation centre. | 16 participants 9 male & 7 female, aged between 26 and 79, between 9months and 2 years post injury. | Semi-structured interviews Grounded theory (Strauss & Corbin, 1998) | Core values Relationships Worldview Identity Inner posture |
| Khanjani, Younesi, Khankeh & Azkhosh (2017 | Exploring Facilitators of Post-traumatic Growth in Patients with Spinal Cord Injury: A Qualitative Study. | Iran | To explain the facilitators of PTG based on the experiences of patients with a SCI. | Not provided | 16 participants including 9 male, 7 female, aged 26 to 63 years, average age was 46.6, age of injury 7-54years, 5-32 years post injury. | Semi-structured interviews<br><br>Qualitative content analysis | Existence of support resources Contact with SCI associations Spiritual beliefs Positive attitude toward injury Access to proper facilities Enhancement of knowledge and awareness Active presence in society |

| Wang, Wang, Wang, Xie, Shi & Zhao (2017) | The process of posttraumatic growth in individuals with traumatic spinal cord injury in Mainland China: An interpretative phenomenological analysis | China | To explore the process of adjustment and growth of people with SCI in mainland China and identify the factors that contribute to a positive attitude toward the SCI | Halfway house for SCI program at Rehabilitation centre. | 12 Participants 7 male, 5 female, aged 25 - 46, age of injury between 11 and 34, time since injury between 3 and 20 years. | Semi-structured interviews IPA (Smith and Osborn, 2008) | Struggling in hopelessness Disentangling from disability Facing challenge and achieving positive growth |

**Quality Appraisal**

Use of the CASP tool showed studies were of moderate to high quality. Most studies (6/9) scored 17 or above on the total CASP score, indicating high quality. All studies provided clear aims and rationale for the use of qualitative methodology. The studies scored lowest for research design, reflexivity, and ethical considerations. Only four studies met criteria for research design, and this was insufficiently described across studies. Most studies did not meet criteria for relationship and reflexivity (Yes = 1, Can't tell = 4, No = 4). Six studies met criteria for ethics, however information regarding ethics was generally sparse and significantly lacking in two studies. It should also be noted that Chun and Lee's studies (2008, 2010 and 2013) appeared to use the same data. There was a lack of transparency about this in the 2010 paper, which was captured in the scoring. All studies were rated "Yes" for providing valuable contributions to research and clinical practice.

**Table 3.** Quality Appraisals

| Study | Clear aims stated | Qualitative methodology appropriate | Research design appropriate | Recruitment strategy appropriate | Data collection appropriate | Relationship & reflexivity | Ethical considerations | Rigorous data analysis | Findings clearly stated | Value of research | Total score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chun & Lee (2008) | ✔ | ✔ | ? | ✔ | ✔ | ? | X | ✔ | ✔ | ✔ | 16 |
| Chun & Lee (2010) | ✔ | ✔ | ? | ✔ | ? | ? | X | ✔ | ✔ | ✔ | 15 |
| Chun & Lee (2013) | ✔ | ✔ | ✔ | ? | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | 19 |
| Crawford et al. (2014) | ✔ | ✔ | ✔ | ✔ | ✔ | X | ✔ | ? | ✔ | ✔ | 17 |
| Griffiths & Kennedy (2012) | ✔ | ✔ | ✔ | ✔ | ✔ | X | ? | ✔ | ✔ | ✔ | 17 |
| Kennedy et al. (2013) | ✔ | ✔ | ? | ✔ | ? | X | ✔ | ? | ? | ✔ | 14 |
| Khanjani et al. (2017) | ✔ | ✔ | ✔ | ? | ✔ | ? | ✔ | ✔ | ? | ✔ | 17 |
| Littooij et al. (2016) | ✔ | ✔ | ? | ✔ | ✔ | X | ✔ | ✔ | ✔ | ✔ | 17 |
| Wang et al. (2017) | ✔ | ✔ | ? | ✔ | ? | ? | ✔ | ✔ | ✔ | ✔ | 17 |

Note. ✔ = Yes, **X** = No, **?** = Can't tell

**Meta-ethnography Findings**

Four interrelated themes were identified which provide knowledge about the social processes that might aid or undermine the experience of PTG following SCI. The identified themes were: 1) Sense of Self and Identity; 2) Close Relationships as Enablers of Growth; 3) Connecting with the Peer Community; and 4) Reintegrating into Society. Table 4 shows the frequency of themes across studies.

**Table 4.** Identified Themes

| Identified Themes | | Total | Chun & Lee (2008) | Chun & Lee (2010) | Griffiths & Kennedy (2012) | Chun & Lee (2013) | Kennedy et al. (2013) | Crawford et al. (2014) | Lijotti et al. (2016) | Khanjani et al. (2017) | Wang et al. (2017) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sense of Self and Identity | SCI as a Threat to Identity | 3 | | | ✓ | | | ✓ | | | ✓ |
| | SCI and the Disabled Identity | 4 | | | | | | ✓ | ✓ | ✓ | ✓ |
| | Reconstructing Identity | 4 | | | ✓ | | | ✓ | ✓ | | ✓ |
| | Personal Growth | 6 | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Close Relationships as Enablers of Growth | Sense of Belonging | 5 | ✓ | | ✓ | ✓ | | ✓ | ✓ | | |
| | Providing Meaning & Motivation | 5 | ✓ | | | ✓ | | | ✓ | ✓ | ✓ |
| | Support in Living with SCI | 5 | ✓ | | ✓ | ✓ | | ✓ | | ✓ | |
| | Encouraging Exploration | 6 | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ |
| | Strengthened Relationships | 6 | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Connecting with the Peer Community | Fostering a Sense of Belonging & Acceptance | 5 | ✓ | ✓ | | | ✓ | ✓ | | | ✓ |
| | Support from a Lived Experience Perspective | 5 | ✓ | ✓ | | | | ✓ | | ✓ | ✓ |
| | Knowing there is Life after SCI | 4 | | | ✓ | ✓ | | | | ✓ | ✓ |
| | Appreciation through Social Comparison | 4 | ✓ | ✓ | | ✓ | | ✓ | | | |
| | Giving Back to the Peer Community | 6 | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Reintegrating into Society | Navigating the Social World with Disability | 3 | ✓ | | | | | ✓ | ✓ | | ✓ |
| | Exploring Abilities and Finding Hidden Strengths | 5 | ✓ | ✓ | ✓ | | ✓ | ✓ | | | |
| | Re-establishing a Valued Social Identity | 7 | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |

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**Sense of Self and Identity**

The first theme reflects the impact of SCI on sense of self and identity. This was influenced by perceptions of societal narratives and stigma regarding disability. Individuals engaged with cognitive and behavioural processes as part of reconstructing their identity. Findings showed the potential for individuals to experience PTG in self view and in relating to others through the process of reconstructing a new identity. Identity reconstruction happens as the individual interacts with their social world; thus, this theme runs throughout the other themes of the review.

*SCI as a Threat to Identity*

Three out of nine studies highlighted how SCI had the potential to break down the individual's sense of previous identity. This appeared to be due to the significant global changes experienced to the physical, psychological, and social self:

> *"Dealing with the physical aspect, the physical changes to your being. Dealing with psychological and psychosocial difficulties, so how do the physical changes impact on you as a person, and your environment, how does that all fit together."* (Griffiths and Kennedy, 2012, p.245)

> *"I also did not realize the more nuance things. Such as, you know, your identity being completely shattered more or less."* (Crawford et al., 2014, p.401)

*SCI and the Disabled Identity*

SCI seemed to come with a *'Forced New Identity'* (Crawford et al., 2014) as a disabled person. This impacted on the individual's sense of self and self-esteem due to the influence of stigma, discrimination, and societal narratives about disability. Across four studies there were ideas about what it might mean for individuals to be given a label or identity of "*disabled*". Individuals used words such as "*burden*" (Wang et al., 2017, p.641), "*failure*" (Crawford et al., 2014, p.404), "*bother*" (Lijotti et al., 2016, p.200), "*ineffective*" (Khanjani et al., 2017, p.3548) and "*inferior*" (Wang et al., 2017, p.642) to describe self or societal perceptions of them due to visible disability. Based on these ideas there were concerns about how people in their social world might perceive and interact with them, including fears of rejection:

*"I didn't like that they look at me as an ineffective disabled person, especially my family, because when you are disabled, no matter how kind your family members are, they still look at you as a disabled person who can't work"* (Khanjani et al., 2017, p.3548)

*"If you are poor, and if you don't have suitable elevator or go outside with a low-quality wheelchair or with shabby clothes, society may not accept you"* (Khanjani et al., 2017, p.3548)

### *Reconstructing Identity*

Findings from four studies showed individuals re-constructed their identities through cognitive processes based on their experiences in their social world. The extent to which individuals either re-aligned with previous identities or built a new identity based on their new physical, psychological and self-social varied:

*"So then I lost my sexuality, the image that I was, everything was totally gone. I had to totally rebuild myself as a new person."* (Crawford et al., 2014, p.401)

*"In my situation, the way I know myself ... (own name) is still (own name). Nothing different about that. Yes, I have a... I am (own name) with a little extra."* (Lijotti et al., 2016, p.201)

Moving beyond a disabled identity appeared to be an important part of being able to rebuild a more positive sense of self, described by Wang et al. (2017) as "*Disentangling from disability*":

*"Don't consider yourself disabled, you just do things in a different way. We're social men using wheelchairs as legs…"* (Wang et al., 2017, p.643)

### *Personal Growth*

Six studies found individuals with SCI reported positive changes in personality and how they related to others from being in an unexpected social position and reconstructing their identity.

*"...I'm nicer. I'm not quite as sarcastic. I am thankful that I learned sensitivity. That's what it was. Not that I was mean, but I wasn't sensitive at all and now I've gotten a little bit more. I watch what I say more often, I try not to hurt people's feelings"* (Chun and Lee, 2013, p.16)

*"to be more patient, to open up"* (Kennedy et al., 2013, p. 205)

**Close Relationships as Enablers of Growth**

The second theme reflects the role of close relationships in enabling growth through providing a '*Sense of Belonging*', '*Meaning and Motivation*' to continue living and improving, '*Support in Living with SCI*', and '*Encouraging Exploration*' of abilities and identity.

*Sense of Belonging*

Findings from five studies showed close relationships were important in enabling individuals to experience a sense of belonging and attachment. Despite experiencing a significant injury individuals could see their families still loved and cared for them, and were "*always there*" for them (Chun and Lee, 2013, p.15):

> *"...as close as you can come to complete and utter failure. Not being able to feed yourself and put clothes on. Seeing people that still love you. It sounds really you know silly to say that as most people would say of course we still love you. But until you actually see it. It was hard to actually understand why someone would still care about me."* (Crawford et al., 2014, p.404)

Continued acceptance and belonging in the family appeared to be an important aspect of PTG as this provided continuity of aspects of social roles and identity within the family:

> *"Daddy is still dad."* (Griffiths & Kennedy, 2012, p.245)

> *"I used to do everything for myself, [then] I couldn't do anything. It affected my life even when it came to my kids because my mum went and got guardianship of them. That's been really hard, and I'm still in court fighting for my kids"* (Chun & Lee, 2008, p.882)

Chun and Lee's (2008) quote from an individual who had not experienced PTG demonstrates how close relationships can undermine the experience of PTG when valued parts of social identity, such as being a mother, are not supported.

***Providing Meaning and Motivation***

Five studies referred to the importance of close family relationships in providing meaning and motivation to continue living and to improve:

> *"Yes, I go on. Or I aim to, anyway. I try…I have two daughters. And a wife, and a dog. And I still enjoy living."* (Lijotti et al., 2016, p.200)

> *"I realized that if I stayed at home, it would become hard for me, and I would get bed sores and other problems. I realized that, in that way, I would harm both myself and my family; therefore, I decided to begin an activity and started to work".* (Khanjani et al., 2017, p.3548)

***Support in Living with SCI***

Five studies referred to the role of family in providing practical support and opportunities for self-disclosure needed to come to terms with the injury and learn to live well:

> *"It has been nice to have somebody to talk with about personal issues. If I need to unload my issues with somebody, I unload it on my youngest daughter, and sometimes I complained about my husband because he did not understand something"* (Chun and Lee, 2008, p.882)

> *"I wouldn't have achieved anything without the help of my family. I would've been, probably, cooped up in the house, just the same as I was in the first year after the injury. My families were sympathetic to me…and stood by my side as much as they could."* (Khanjani et al., 2017, p.3547)

***Encouraging Exploration***

The importance of being encouraged and enabled to explore and understand their new physical and social self, through leisure, social activities, and activities of daily living, was referred to in six studies:

> *"My friends had me up on my mule. Though I couldn't walk or take a step, they had me riding. If I couldn't have ridden I would have given up. I knew God was not punishing me because I could still ride..."* (Chun and Lee, 2010, p.408)

*"My husband doesn't overdo it with me. He doesn't try like my dad, "oh you cannot open that refrigerator. Here, let me get it for you". My husband just lets me do it…"* (Chun and Lee, 2013, p.15)

In contrast, overprotection from family could be a barrier to PTG:

*"For six years, I never had a chance to go out except to see the doctor. My parents considered it unnecessary for me to go out. I do not want to be enclosed in the house. I hope to go out of the house and visit all places of society."* (Wang et al., 2017, p.642)

Being enabled and encouraged to explore their new physical and social self was an important part of the development of PTG as it enabled participants to challenge previous assumptions and understand what they were capable of and what life could be like with a SCI. This appeared to be important for reconstructing identity.

### *Strengthened Relationships*

Six studies found participants experienced strengthened relationships with family following SCI due to appreciation of support and through re-appraising life priorities due to experiencing significant vulnerability:

*"Sometimes I feel that I have died, now every day is a reward for me. I want to cherish every moment and dedicate it to the people around me."* (Wang et al., 2017, p.645)

*"Close people move even closer together"* (Kennedy et al., 2013, p.206)

### Connecting with the Peer Community

This theme reflects the importance of connecting with peers with SCI in the experience of PTG. Peers appeared to be important in *'Fostering a Sense of Belonging and Acceptance'*, providing *'Support from a Lived Experience Perspective', 'Knowing there is Life after SCI'* and providing opportunities to re-appraise and appreciate their own situation through *'Social Comparison'*. From the positive experiences within the peer community many expressed a desire for *'Giving Back to the SCI Community'*.

*Fostering a Sense of Belonging and Acceptance*

Five studies referred to the usefulness of joining SCI or disability groups in providing opportunities to rebuild and expand social networks. Building friendships and connections through shared understanding fostered a sense of belonging and acceptance in a social group outside of their immediate network:

> *"The sense of belonging in this group changed my mood. I could share my thoughts and feelings with them. My heart opened and I wasn't so melancholic."* (Wang et al., 2017, p.644)

> "*You know connecting you to a community of similar abilities or experiences that was more positive. It was like a new family."* (Crawford et al., 2014, p.404)

*Support from a Lived Experience Perspective*

Five studies referred to the role of peers in providing emotional and informational support. Findings show participants felt able to self-disclose about emotions, thoughts, and personal issues due to a shared understanding of difficulties:

> *"it was good to see other people who could talk about my personal issues such as a 'bowel program' because nobody else really understood and did not talk about those issues if he/ she was not in a chair."* (Chun and Lee, 2010, p.406)

> *"I'm meeting and re-meeting people who have similar injuries.... I've met a lot of good people with whom I could share my thoughts and feelings"* (Chun and Lee, 2008, p.883)

Participants valued the information and empathy provided by peers, and felt enabled to learn to live better with SCI:

> *"there were some personal problems that every patient with a spinal cord injury experiences. With the help of the experiences of other patients in the association, I learned how to deal with my problems in a better way."* (Khanjani et al., 2017, p.3547)

### Knowing there is life after SCI

Five studies found engaging with peers enabled individuals to see that life could continue and they could live well with a SCI:

> *"Meeting people who had been injured...it was a nice way to see that life goes on."* (Griffiths and Kennedy, 2012, p.247)

> *"There are other people like me; it's not the end of the world. They can continue their lives, and it is up to them. It is all dependent on our mindset and beliefs. If we have correct beliefs, nothing is a limitation."* (Khanjani et al., 2017, p.3547)

This seemed to be important as part reconstructing beliefs about disability and future possibilities.

### Appreciation Through Social Comparison

Meeting others with SCI was found in four studies to provide individuals with opportunities for downwards social comparisons, comparing to those who they perceived as functionally worse in terms of injury, physical ability, or social circumstances, which helped in re-appraising their own injuries and circumstance more positively:

> *"Oh, you don't have it so bad. You're only a para. Look at these quads. Aren't you glad you can do [something by yourself]...I feel a lot luckier. I'm very blessed in so many ways"* (Chun and Lee, 2008, p.885)

### Desire to Give Back to the Peer Community

Six studies referred to this subtheme. Due to receiving support and encouragement from the peer community many individuals reported a desire to give back, including through involvement with charities or sharing stories online:

> *"I'll try to publicize my positive energy. I have uploaded some videos, when other people with SCI see me they can learn from me. Many peers say I'm their idol and spiritual pillar. I want to tell people that life with a SCI can be so exciting."* (Wang et al., 2017, p.646)

*"really enjoyed helping people with SCI by letting them know that this isn't the end and that they have a life after acquiring SCI."* (Chun and Lee, 2010, p.408)

**Reintegrating into Society**

The final theme refers to the influence of reintegration into society through work, education, leisure, sports, or travel on the development of PTG. Though not a linear process, reintegrating into wider society seemed to be conclusive for participants in regaining their identity and sense of belonging and acceptance in the social world.

*Navigating the Social World with Disability*

In three studies participants referred to how people in the wider social world, such as neighbours or strangers, interacted differently with them due to visible disability. Individuals who experienced PTG were able to find ways to manage and be able to reintegrate into society and re-construct their place in the social world:

*"At first, when other people gazed me, I always thought "what do they take me for, a gorilla in the zoo or others"? Generally, my mentality changed. I find their smiles show not only curiosity but include care for me."* (Wang et al., 2017, p.643)

*Exploring Abilities and Finding Hidden Strengths*

Leisure and sports activities were referred to in five studies as ways in which individuals were able to take risks and explore their physical and psychological selves. Through these processes individuals could find hidden strengths, helping them to re-appraise their abilities:

*"It was like basically learning a new sport, figuring out how to use a wheelchair. I have to figure out how to lift my body to get from the bed to the wheelchair. So the determination and the athletes' mindset of, let's just get on with it...in terms of pushing my physical limits I was able to; I was willing and able to take risks."* (Crawford et al., 2014, p.403)

***Re-establishing a Valued Social Identity***

Seven studies referred to how re-integrating into the social world provided opportunities to align with valued characteristics or roles within society, and therefore move away from a disabled identity:

> *"they still look at you as a disabled person who can't work; this really annoyed me, and I didn't want to be this viewpoint toward me. So, I went looking for a job, and after I started working, I felt better about myself, and I didn't feel as a burden anymore."* (Khanjani et al., 2017, p.3548)

> *"...when I found out about rugby and realized it was full contact, I was like even though I can't walk and run around, I can still play full contact in a chair. And that was pretty cool for me knowing that aspect was still there. In high school, I was always the "athlete" that is just who I was. Knowing that part of my life was still there was huge for me."* (Crawford et al., 2014, p.402)

Re-establishing an identity as a working person, student or athlete helped individuals to feel they could be valued members of society. Many gained social recognition and acceptance in this way:

> *"The organization that I worked...told me that I had to enter my workplace again, and they said that they needed me; therefore, I really felt that, despite my condition, they needed me and wanted me."* (Khanjani et al., 2017, p.3547)

**Discussion**

The review aimed to examine social processes involved in the development of PTG as part of adjustment to SCI. Systematic review of the literature identified nine relevant studies. Studies were critically appraised using the CASP assessment tool (2018), finding moderate to high quality. Data synthesis utilising a meta-ethnographic approach (Noblit and Hare, 1998) generated four inter-related themes: 1) Sense of Self and Identity; 2) Close Relationships as Enablers of Growth; 3) Connecting with the Peer Community; and 4) Reintegrating into Society. The studies included in the review captured the experiences of individuals living with SCI across seven different countries, including both Eastern and Western cultures. There was evidence to suggest that themes were consistent across countries and cultures, suggesting themes can be considered universal rather than culturally specific.

The meta-ethnography suggests identity reconstruction processes may be central to the experience of PTG following SCI. Experiencing SCI seemed to have the potential to shatter an individual's personal narrative and sense of self, as they confronted a new identity as a disabled person. This is in line with Tedeschi and Calhoun's (2004) idea of trauma disrupting an individual's core beliefs about self, world, and others. The findings also support research suggesting SCI may result in 'biographic disruption' to personal narratives (Dickson et al., 2008). The findings indicated negotiation of a disabled identity was influenced by social stereotypes; in line with the proposal by Tedeschi et al. (2018) that societal narratives shape PTG and previous research (Dickson, et al., 2008).

This theme revealed disrupted identity led to cognitive and behavioural processes as the individual explored ideas about disability, acceptance and belonging within the context of their social world. Tedeschi and Calhoun (2004) focus heavily on the role of cognitive processes, through self-analysis and self-disclosure, in rebuilding core beliefs. The findings supported the role of self-disclosure; however, the findings also show that within the context of acquired disability behavioural processes of exploring a new body (through sports, leisure, and everyday activities) and understanding one's capabilities are important for PTG. This is supported in previous research (January et al., 2015), however this adds to the model provided by Tedeschi et al. (2018).

Individuals who experienced PTG appeared to have dis-entangled from a disabled identity in ways that enabled them to re-construct their personal narrative and experience more positive outcomes. This is in line with previous studies showing that identity integration following acquired disability influences psychological wellbeing and maturation (Adler et al., 2019). The process of identity re-negotiation following acquired disability is not currently included within Tedeschi et al. (2018) model as the model is not specific to the experience of growth in this context; however, models in the SCI field may be applied. Yoshida (1993) provides a pendulum model of identity reconstruction, whereby the individual oscillates between nondisabled and disabled aspects of self as they reconstruct their identity following SCI. Consistent with the review findings, Yoshida's (1993) model highlights the importance of moving beyond an identity totalised by the disabled self for wellbeing. Moreover, the review shows individuals reconstruct their beliefs about the self, world, and others within the context of relationships and social interactions; in line with Tedeschi et al. (2018) and Yoshida (1993) models.

In agreement with previous research and theory, close relationships were shown to play an important and multifaced role in enabling PTG (Ghannad et al., 2018; Rahimi et al., 2016; Schroevers et al., 2010; Tedeschi et al., 2018). Firstly, close relationships were found to provide meaning for the individual to live well and strive to improve; and secondly to provide support, and opportunities for self-disclosure, which enabled the individual to reflect, adjust and learn to live well. This in line with the model from Tedeschi et al. (2018) which sees social support as important in enabling coping and cognitive processing. Close relationships, encouraging and enabling exploration of self, were also shown to be important in this review as they enabled the individual to understand their capabilities, exert independence and explore their social world. These mechanisms extend those proposed by Tedeschi et al. (2018).

Furthermore, close relationships were found to provide a relational space for the individual to make sense of the impact of SCI on identity and participation in the social world. Relationships that protected the individual's sense of belonging, acceptance and role within the family enabled them to challenge and reconstruct beliefs about disability and develop a positive sense of self. Additionally, support of exploration appeared to be important not only for exploring the physical self, but for how this might

reinforce or challenge personal narratives about disability, and therefore interacted with identity reconstruction processes.

In line with previous research, the findings showed the potential for individuals to experience growth in relationships (Byra, 2016). This was found to occur through a process of re-evaluating the importance of relationships through seeing the fragility of life. Individuals also experienced increased closeness and gratitude for support, which strengthened relationships further.

Another significant review finding was the pivotal role engaging with those with lived experience plays in the development of PTG. In line with Tedeschi et al. (2018), peers were found to provide additional opportunities for self-disclosure, support and advice which promoted coping and enabled PTG. However, the role of peers was found to be much more multi-faceted than captured in the model. Firstly, engaging with a peer community was found to foster belonging and acceptance, enabling the individual to build new friendships and to experience social acceptance outside their immediate social network. Secondly, social comparison processes were found to be important as part of re-constructing ideas about disability and possible futures, and in comparing circumstances and feeling grateful in comparison. Furthermore, the findings showed individuals felt it was important to give back to peers. It is possible this was both an outcome of PTG and the changes in personal characteristics and increased appreciation of support and relationships, as well as part of the process of experiencing PTG. Giving back may have produced feelings of worth and value, and reciprocity of relationships, supporting the rebuilding of beliefs about self in relation to others.

Finally, the review showed the importance of social participation, through leisure, sport, work, and education, in the development of PTG. This was found to enable individuals to explore and understand strengths and limitations of new physical and psychological selves. It was also significant in enabling individuals to re-discover or re-build valued social identities, and experience social acceptance and recognition. These ideas were important in terms of reconstructing beliefs about self and participation in the social world as part of PTG processes. The findings align with an interview study by Hammer et al. (2017) showing the role of para-sports participation in promoting PTG through fostering feelings of competence, autonomy, and social connection, and in facilitating identity processes.

**Limitations**

The review is limited by the current research base. A relatively small number of studies were found which met inclusion criteria. Additionally, the Chun and Lee (2008, 2010, 2013) studies appeared to use the same data; further limiting the review scope. Broadening the research population could have increased the number of studies, which might have strengthened the findings by providing more evidence for themes or new emergent ones. However, this likely would have reduced the relevance and value of findings to the field of SCI. Despite the small number of studies, the review was able to provide meaningful insights and clinical implications.

Additionally, the studies included in the review investigated the experiences of individuals living across seven different countries and cultures. There was evidence to suggest the themes were consistent across countries. However, as most of the studies were from Western countries, including the USA, Canada, and Europe, and due to the relatively small number of studies included in the review, the review likely did not fully capture how the experience of living with a disability and PTG varies cross-culturally.

Furthermore, the use of terms for growth varied across studies due to a lack of unified theory in SCI. Four studies explored 'positive psychological outcomes', 'changes in global meaning', 'gain' or 'gratitude'. This meant it was only possible to establish that participants included in the review experienced some form of positive psychological change following SCI, though this might not be equivalent to PTG. On balance it was agreed that the included studies examined concepts that were theoretically similar enough to PTG, in terms of the outcomes and processes under study, to provide relevant knowledge for the review aims. Additionally, there is also a lack of agreed definition and model of identity reconstruction processes that can be derived from the review, meaning the use of terms for this process varied across studies and within this paper.

Furthermore, there was a lack of reflexivity in the analysis and interpretation of findings in the included papers, which has implications for the potential for bias and credibility of findings. However, the findings across studies were deemed similar enough for reciprocal synthesis, which indicates a level of trustworthiness and credibility of the findings of the included studies.

Another limitation was in the application of exclusion criteria. The review aimed to exclude studies if participants were interviewed less than one year post injury or if they explored experiences of SCI in childhood. Due to limited disclosure of individual participant information on time since injury and age at injury it was possible only to conclude that the papers reflected the views of a majority of participants who were adults at time of injury and had lived with SCI for more than one year.

The CASP tool enabled systematic quality assessment of included studies. However, the tool came with limitations. Firstly, application is reliant on detailed reporting of methodology, procedure, and results. Therefore, CASP tool outcomes may represent more of an assessment of reporting quality than of methodological quality. Moreover, the tool places emphasis on methodological quality over assessment of theory and epistemology (Leung, 2015), and thus it has been criticised for not allowing evaluation of interpretative and theoretical validity (Hannes et al., 2010). Despite its limitations the CASP tool provided a framework to assess methodological strengths and weaknesses of studies, with moderate inter-rater reliability when independently scored.

**Clinical Implications**

The review provides implications for clinical practice. Firstly, findings suggest it would be important to explore how the individual is re-constructing their personal narrative as part of clinical assessment, formulation, and intervention throughout the individual's rehabilitation journey. Clinicians might also consider specific ways they can support with this process, for example through connecting goal planning and rehabilitation exercises with valued aspects of identity or social roles. Moreover, individuals may benefit from specific psychological interventions that promote the development of a positive sense of self. Acceptance and Commitment Therapy could be a promising intervention due to its focus on creating flexibility in how the individual describes and relates to their self-identity, exploring individual values, and promoting living in line with one's values.

Understanding the individual's social environment, including access to supportive others, family dynamics, social participation, and the role of social comparisons, should be included in a comprehensive bio-psychosocial assessment of individual needs. Healthcare services should consider ways they can work with the wider family to support the individual's transition home and strengthen

the family's ability to provide effective support that enables independence, exploration, and continuation of roles within the family. Furthermore, social participation and integration opportunities should be engineered as part of discharge planning to support individuals to consider ways in which they might connect with valued social roles and explore capabilities and strengths in meaningful ways.

Finally, healthcare services should consider how current service provision enables opportunities to engage with and learn from peers and explore how opportunities can be strengthened in collaboration with the third sector.

**Future Research**

Systematic search of the research field revealed a relatively small number of qualitative studies exploring the experience of growth following SCI, demonstrating a need for more qualitative studies of adaptation and growth to understand lived experience of SCI. The review highlighted specific areas of research that could be the target of qualitative studies. Firstly, findings offered meaningful insights into the role of identity reconstruction in the development of PTG following SCI. However, this is likely to be a much more complex and multi-faceted process than was captured within the scope of this review. It would be valuable to understand more about these processes and how findings might inform clinical practice.

Furthermore, the review highlights the importance of relationships with close others and connections with peers in the development of PTG. Mechanisms such as supporting a sense of belonging, providing support for living and self-disclosure were highlighted by the review. However, evidence regarding these mechanisms is limited in the current research base. Further research looking specifically at the role of support from others in the development of PTG following SCI could provide further insights on which to base clinical practice.

Further research is needed to understand the influence of cross-cultural differences in social narratives regarding disability on the experience of PTG.

Finally, the findings highlighted some processes of PTG not currently defined within Tedeschi et al.'s (2018) model, suggesting the need for further testing of the model when applied to acquired

disability. This would help establish the validity of the model for understanding adaptation and growth in this context, as would agreement on terminology in the field.

**Conclusion**

The review provided insights into the social processes involved in the development of PTG following SCI. Identity reconstruction processes were found to be a central pathway. Identity reconstruction takes place in the context of the individual's relationships and social world. The individual explores ideas of acceptance, belonging and value within their close networks, peer community and wider society. This can promote the reconstruction of a positive self-identity when the individual is able to challenge previously held narratives about disability, which have developed due to societal narratives, and generate ideas about how disability can be integrated into personal identity. Close relationships and peers were also shown to be important in providing support in living with SCI, and in promoting the cognitive and behavioural processes of PTG.

# References

Adler JM, Lakmazaheri A, O'Brien E, Palmer A, Reid M and Tawes E (2021) Identity integration in people with acquired disabilities: A qualitative study. *Journal of personality,* 89(1): 84-112. https://doi.org/10.1111/jopy.12533

Ahuja CS, Wilson JR, Nori S, Kotter M, Druschel C, Curt A and Fehlings MG (2017) Traumatic spinal cord injury. *Nature reviews Disease primers,* 3(1): 1-21. Doi:10.1038/nrdp.2017.18

Altman DG (1999). *Practical statistics for medical research*. New York, NY: Chapman & Hall/CRC Press

Atkins, S., Lewin, S., Smith, H., Engel, M., Fretheim, A and Volmink, J., 2008. Conducting a meta-ethnography of qualitative literature: lessons learnt. *BMC medical research methodology,* 8(1):1-10. https://doi.org/10.1186/1471-2288-8-21

Bonanno GA, Kennedy P, Galatzer-Levy IR, Lude P and Elfström ML (2012) Trajectories of resilience, depression, and anxiety following spinal cord injury. *Rehabilitation psychology,* 57(3): 236-247. DOI: 10.1037/a0029256.

Byra S (2016) Posttraumatic growth in people with traumatic long-term spinal cord injury: predictive role of basic hope and coping. *Spinal Cord,* 54(6): 478-482. DOI: 10.1038/sc.2015.177

Cahill M, Robinson K, Pettigrew J, Galvin R and Stanley M (2018) Qualitative synthesis: a guide to conducting a meta-ethnography. *British journal of occupational therapy,* 81(3): 129-137. https://doi.org/10.1177/0308022617745016

Calhoun LG, Cann A and Tedeschi RG (2010) The posttraumatic growth model: Sociocultural considerations. In Weiss T and Berger  R (eds*) Posttraumatic growth and culturally competent practice: Lessons learned from around the globe*. John Wiley & Sons Inc, pp. 1–14.

Calhoun LG and Tedeschi RG (2001) Posttraumatic growth: The positive lessons of loss. In Neimeyer RA (Ed.) *Meaning reconstruction & the experience of loss*. American Psychological Association, pp. 157–172.

Carroll C, Booth A and Lloyd-Jones M (2012) Should we exclude inadequately reported studies from qualitative systematic reviews? An evaluation of sensitivity analyses in two case study reviews. *Qualitative health research,* 22(10): 1425-1434. https://doi.org/10.1177/1049732312452937

Chun S and Lee Y (2008) The experience of posttraumatic growth for people with spinal cord injury. *Qualitative Health Research*, 18(7): 877-890. DOI: 10.1177/1049732308318028

Chun S and Lee Y (2010) The role of leisure in the experience of posttraumatic growth for people with spinal cord injury. *Journal of Leisure Research,* 42(3): 393-415. https://doi.org/10.1080/00222216.2010.11950211

Chun S and Lee Y (2013) "I am just thankful": the experience of gratitude following traumatic spinal cord injury. *Disability and rehabilitation,* 35(1): 11-19. Doi:10.3109/09638288.2012.687026

Cohen S and Wills TA (1985) Stress, social support, and the buffering hypothesis. *Psychological bulletin,* 98(2): 310 – 357. https://doi.org/10.1037/0033-2909.98.2.310

Crawford JJ, Gayman AM and Tracey J (2014) An examination of post-traumatic growth in Canadian and American ParaSport athletes with acquired spinal cord injury. *Psychology of Sport and Exercise,* 15(4): 399-406. https://doi.org/10.1016/j.psychsport.2014.03.008

Craig A, Tran Y and Middleton J (2009) Psychological morbidity and spinal cord injury: a systematic review. *Spinal cord*, 47(2): 108-114. DOI: 10.1038/sc.2008.115

Critical Appraisal Skills Programme (2018) CASP Qualitative Research Checklist. Available at: https://casp-uk.net/casp-tools-checklists/ (accessed February 2022).

Dalton J, Booth A, Noyes J and Sowden AJ (2017) Potential value of systematic reviews of qualitative evidence in informing user-centered health and social care: findings from a descriptive overview. *Journal of clinical epidemiology*, 88: 37-46. https://doi.org/10.1016/j.jclinepi.2017.04.020

Davis CG and Novoa DC (2013) Meaning-making following spinal cord injury: Individual differences and within-person change. *Rehabilitation Psychology* 58(2): 166-177. https://doi.org/10.1037/a0031554

Dickson A, Allan D and O'Carroll R (2008) Biographical disruption and the experience of loss following a spinal cord injury: An interpretative phenomenological analysis. *Psychology and Health,* 23(4): 407-425. https://doi.org/10.1080/14768320701219136

Dijkers M (2005) Quality of life of individuals with spinal cord injury: a review of conceptualization, measurement, and research findings. *Journal of rehabilitation research and development,* 42(3): 87-110. DOI: 10.1682/JRRD.2004.08.0100

France EF, Wells M, Lang H and Williams B (2016) Why, when and how to update a meta-ethnography qualitative synthesis. *Systematic reviews,* 5(1): 1-12. doi: 10.1186/s13643-016-0218-4

Garside R (2014) Should we appraise the quality of qualitative research reports for systematic reviews, and if so, how?. *Innovation: The European Journal of Social Science Research,* 27(1): 67-79. https://doi.org/10.1080/13511610.2013.777270

Ghannad SZ, Fateminik T and Allipour S (2018) The Role of Social Support, Life Meaningfulness, and Centrality of Religiosity in Posttraumatic Growth and Life Satisfaction of People with Spinal Cord Injury. *Jundishapur Journal of Chronic Disease Care*, 7(4):e57563. DOI: 10.5812/jjcdc.57563.

Griffiths HC and Kennedy P (2012) Continuing with life as normal: Positive psychological outcomes following spinal cord injury. *Topics in Spinal Cord Injury Rehabilitation*, 18(3): 241-252. https://doi.org/10.1310/sci1803-241

Hallam W and Morris R (2014). Post-traumatic growth in stroke carers: A comparison of theories. *British journal of health psychology*, 19(3): 619-635. https://doi.org/10.1111/bjhp.12064

Hammer C, Podlog L, Wadey R, Galli N, Forber-Pratt AJ, Newton M, Hall M and Greviskes L (2019) Understanding posttraumatic growth of paratriathletes with acquired disability. *Disability and rehabilitation,* 41(6): 674-682. https://doi.org/10.1080/09638288.2017.1402961

Hannes K and Bennett S (2017) Understanding evidence from qualitative research. In: Hoffman T, Bennett S, and Del Mar, C (eds) *Evidence-based practice across the health professions. 3rd ed*. Chatswood, NSW: Elsevier Australia, pp.226–247.

Hannes K, Lockwood C and Pearson A (2010) A comparative analysis of three online appraisal instruments' ability to assess validity in qualitative research. *Qualitative health research,* 20(12): 1736-1743. https://doi.org/10.1177/1049732310378656

Leung L (2015) Validity, reliability, and generalizability in qualitative research. *Journal of family medicine and primary care,* 4(3): 324–327. doi: 10.4103/2249-4863.161306

January AM, Zebracki K, Chlan KM and Vogel LC (2015) Understanding post-traumatic growth following pediatric-onset spinal cord injury: The critical role of coping strategies for facilitating positive psychological outcomes. *Developmental Medicine & Child Neurology,* 57(12): 1143-1149. https://doi.org/10.1111/dmcn.12820

Joseph S and Linley PA (2005) Positive adjustment to threatening events: An organismic valuing theory of growth through adversity. *Review of General Psychology,* 9: 262 -280.

Khanjani MS, Younesi SJ, Khankeh HR and Azkhosh M (2017) Exploring facilitators of post-traumatic growth in patients with spinal cord injury: A qualitative study. *Electronic Physician,* 9(1), 3544 – 3553. Doi: 10.19082/3544

Kennedy P, Lude P, Elfström M and Cox A (2013) Perceptions of gain following spinal cord injury: A qualitative analysis. *Topics in Spinal Cord Injury Rehabilitation,* 19(3): 202-210. https://doi.org/10.1310/sci1903-202

Kunz S, Joseph S, Geyh S and Peter C (2018) Coping and posttraumatic growth: A longitudinal comparison of two alternative views. *Rehabilitation psychology,* 63(2): 240-249. https://doi.org/10.1037/rep0000205

Kunz S, Joseph S, Geyh S and Peter C (2019) Perceived posttraumatic growth and depreciation after spinal cord injury: Actual or illusory? *Health Psychology,* 38(1), 53–62. https://doi.org/10.1037/hea0000676

Littooij E, Widdershoven GA, Stolwijk-Swtickste JM, Doodeman S, Leget CJ and Dekker J (2016) Global meaning in people with spinal cord injury: Content and changes. *The Journal of Spinal Cord Medicine*, 39(2): 197-205. https://doi.org/10.1179/2045772314Y.0000000290

Long HA, French DP and Brooks JM (2020) Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Science*s, 1(1):31-42. https://doi.org/10.1177/2632084320947559

National Institute for Health and Care Excellence (2016) Spinal injury: assessment and initial management. Available at: https://www.nice.org.uk/guidance/ng41/resources/spinal-injury-assessment-and-initial-management-pdf-1837447790533 (accessed 28 April 2022).

Noblit GW and Hare RD (1988) *Meta-ethnography: Synthesizing qualitative studies (Vol. 11).* Sage Publications, Inc.

Noonan VK, Dvorak MF and Fehlings MG (2013) Epidemiology of traumatic and nontraumatic spinal cord injury. In: Fehlings MG (eds) *Critical Care in Spinal Cord Injury*: London: Future Medicine Ltd, pp. 6–20.

Noyes J, Booth A, Flemming K, Garside R, Harden A, Lewin S, Pantoja T, Hannes K, Cargo M and Thomas J (2018) Cochrane qualitative and implementation methods group guidance series – paper 3: methods for assessing methodological limitations, data extraction and synthesis, and confidence in synthesized qualitative findings. *Journal of clinical epidemiology,* 97: 49–58. https://doi.org/10.1016/j.jclinepi.2017.06.020

Page MJ, Moher D, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, Shamseer L, Tetzlaff JM, Akl EA, Brennan SE, Chou R, Glanville J, Grimshaw JM, Hróbjartsson A, Lalu MM, Li T, Loder EW, Mayo-Wilson E, McDonald S, McGuinness LA, Stewart LA, Thomas J, Tricco AC, Welch VA, Whiting P and McKenzie JE (2020) PRISMA explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *British Medical Journal*, 372: 160. DOI: 10.1136/bmj.n.160.

Pershouse KJ, Barker RN, Kendall MB, Buettner PG, Kuipers P, Schuurs SB and Amsters DI (2012) Investigating changes in quality of life and function along the lifespan for people with spinal cord injury. *Archives of Physical Medicine and Rehabilitation,* 93(3): 413-419. DOI: 10.1016/j.apmr.2011.10.014

Rahimi R, Heidarzadeh M and Shoaee R (2016) The Relationship between Posttraumatic Growth and Social Support in Patients with Myocardial Infarction. *Canadian Journal of Cardiovascular Nursing,* 26(2): 19–24.

Richardson A, Samaranayaka A, Sullivan M, & Derrett S (2021) Secondary health conditions and disability among people with spinal cord injury: A prospective cohort study. *The journal of spinal cord medicine,* 44(1): 19–28. https://doi.org/10.1080/10790268.2019.1581392

Sattar R, Lawton R, Panagioti M and Johnson J (2021) Meta-ethnography in healthcare research: a guide to using a meta-ethnographic approach for literature synthesis. *BMC Health Services Research,* 21(1): 1-13. https://doi.org/10.1186/s12913-020-06049-w

Schaefer JA and Moos RH (1992) Life crises and personal growth. In: Carpenter BN (eds) *Personal coping: Theory, research and application.* Westport, CT: Praeger, pp. 149−170.

Schroevers MJ, Helgeson VS, Sanderman R and Ranchor AV (2010) Type of social support matters for prediction of posttraumatic growth among cancer survivors. *Psycho-Oncology,* 19(1): 46-53. https://doi.org/10.1002/pon.1501

Shah SZA, Rafiullah IS and Ilyas SM (2017) Assessment of the quality of life of spinal cord injury patients in Peshawar. *Journal Pakistan Medical Association,* 67(3): 434-437.

Silverman AM and Cohen GL (2014) Stereotypes as stumbling-blocks: How coping with stereotype threat affects life outcomes for people with physical disabilities. *Personality and Social Psychology Bulletin,* 40(10): 1330-1340. https://doi.org/10.1177/0146167214542800

Splevins K, Cohen K, Bowley J and Joseph S (2010) Theories of posttraumatic growth: cross-cultural perspectives. *Journal of Loss and Trauma*, 15, 259-277

Spinal Injury Association (2021) Impact Report 2020/2021. Spinal Injury Association: UK. Available at https://www.spinal.co.uk/wp-content/uploads/2021/12/SIA_Impact_Report_20-21-FINAL1.pdf#:~:text=The%20stark%20reality%20is%20that%202%2C500%20people%20every, injury%2C%20forever%20changing%20the%20course%20of%20their%20lives (Accessed 28 April 2022).

Taku K, Cann A, Calhoun LG and Tedeschi RG (2008). The factor structure of the Posttraumatic Growth Inventory: A comparison of five models using confirmatory factor analysis. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies,* 21(2): 158-164.

Taku K, Tedeschi RG, Shakespeare-Finch J, Krosch D, David G, Kehl D, Grunwald S, Romeo A, Di Tella M, Kamibeppu K and Soejima T (2021). Posttraumatic growth (PTG) and posttraumatic depreciation (PTD) across ten countries: Global validation of the PTG-PTD theoretical model. *Personality and Individual Differences,* 169: 110222. https://doi.org/10.1016/j.paid.2020.110222

Tedeschi RG, Park CL, and Calhoun LG (1998) Posttraumatic growth: Conceptual Issues. In Tedeschi RG, Park CL and Calhoun LG (eds.) *Posttraumatic growth: positive changes in the aftermath of crisis.* Mahwah–New Jersey–London: LEA Publishers, pp. 1-22.

Tedeschi RG and Calhoun LG (1995*) Trauma & Transformation: Growing in the Aftermath of Suffering*. Thousand Oaks, CA: SAGE Publications, Inc.

Tedeschi RG and Calhoun LG (2004) Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry,* 15(1): 1-18.

Tedeschi RG, Shakespeare-Finch J, Taku K and Calhoun LG (2018) *Posttraumatic growth: Theory, research, and applications.* Routledge.

Wang Y, Wang H, Wang Z, Xie H, Shi J and Zhao X (2017) The process of posttraumatic growth in individuals with traumatic spinal cord injury in Mainland China: An interpretative

phenomenological analysis. *Journal of health psychology,* 22(5): 637-649. DOI: 10.1177/1359105315610812

Wang Y, Xie H and Zhao X (2018) Psychological morbidities and positive psychological outcomes in people with traumatic spinal cord injury in Mainland China. *Spinal Cord,* 56(7): 704-711. DOI: 10.1038/s41393-017-0044-0

Weiss T and Berger R (2010) Posttraumatic growth around the globe: research findings and practice implications. In Weiss T and Berger R (eds*) Posttraumatic growth and culturally competent practice: Lessons learned from around the globe*. John Wiley & Sons Inc, 189- 195.

Wilcox S (2010) Social relationships and PTSD symptomatology in combat veterans. *Psychological Trauma: Theory, Research, Practice, and Policy, 2*(3): 175 182. https://doi.org/10.1037/a0019062

Yoshida KK (1993) Reshaping of self: A pendular reconstruction of self and identity among adults with traumatic spinal cord injury. *Sociology of Health & Illness,* 15(2): 217-245. https://doi.org/10.1111/1467-9566.ep11346888

Zoellner T and Maercker A (2006) Posttraumatic growth in clinical psychology — A critical review and introduction of a two component model. *Clinical Psychology Review,* 26(5): 626–653. doi:10.1016/j.cpr.2006.01.008

# Safety, Acceptance, and Enablement in a Shaken World: The Role of Relationships in the Development of Post Traumatic Growth following Spinal Cord Injury.

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**Abstract**

The study aimed to explore the lived experience of Post Traumatic Growth (PTG) following Spinal Cord Injury (SCI). Specifically, to understand the role of relationships with close others, peers, and perceived support, and how this interacts with cognitive processing, in the development of PTG. Semi-structured interviews were conducted with 11 participants living with SCI. Interviews were analysed using a Social Constructivist Grounded Theory approach. The results showed SCI can disrupt beliefs about self, others, and world, triggering cognitive and behavioural re-evaluation processes to rebuild beliefs, and in turn experience PTG. Three inter-related themes of how relationships support these processes were revealed: 'a safe place to get back on your feet', 'accepting and valuing me', and 'enabling learning and independence'. Therefore, highlighting the role of relationships in promoting safety, acceptance, and enablement, in facilitating positive outcomes post-SCI. The study provided implications for supporting adjustment through individual, family, and systemic interventions.

**Key Words**

**Introduction**

Acquiring a spinal cord injury (SCI) can have substantial physical, social, and psychological impacts on the individual (Ahuja et al., 2017). This has been shown to put the individual at increased risk of health complications, poor quality of life and mental health difficulties, including depression, anxiety, and post-traumatic stress (Craig et al., 2009). However, research shows most people adapt reasonably well to SCI (Krause et al., 2017). In adjusting to the challenges of SCI research also shows there is potential for positive psychological changes and growth (Byra, 2016; January et al., 2016).

Tedeschi and Calhoun's (2001, 2004, 2018) model of post traumatic growth (PTG) has been applied to SCI whereby PTG is framed as resulting from the struggle with traumatic or highly stressful life circumstances (Calhoun and Tedeschi, 2001). PTG is predicted to occur in several different areas, including appreciation of life, sense of priorities, relationships, sense of personal strength, recognition of new possibilities, spiritual development, and personal narrative (Tedeschi et al., 2004, 2018). Evidence is accumulating that it is possible to experience growth in all PTG domains following SCI (Byra, 2016).

Tedeschi et al. (2018) propose trauma represents a significant disruption to life goals and core beliefs about self, world, and others, triggering deliberate and ruminative cognitive processes as the individual attempts to make senses of their experiences and rebuild core beliefs. PTG then develops through rebuilding core beliefs based on learning and self-reflection from struggling with trauma (Tedeschi et al., 2018).

In support of the PTG model (Tedeschi et al., 2018) research shows SCI can result in rupture of the fabric of everyday life resulting in disruption of identity or self-concept, described by Bury (1982) as 'biographic disruption', which requires the individual to explore and rebuild their sense of self (Dickson et al., 2008; Bourke et al., 2014). SCI can impede the individual's participation in activities, including activities of daily living, hobbies, social activities, and occupation, which can cause disruption to the individual's definition of self related to past, present and future (Denzin, 1992; Dickson et al., 2008). SCI can also lead to movement of 'one social world to another' (Denzin, 1992), as the individual may

suddenly become a member of a new social minority group: people with disabilities (Adler et al., 2019; Dickson et al., 2008). Therefore, the individual is required to determine how their identity or self-concept has been impacted by their injury and the concept of the 'disabled self', as part of reconstructing their identity (Dickson et al., 2008) or core beliefs as described by Tedeschi et al. (2018).

A series of qualitative studies have shown this process of reconstructing identity to be a central pathway to the experience of PTG following SCI. Crawford et al. (2014) identified injury related processing as part of identity reconstruction to be one of the processes of PTG in which para-sports athletes engage. Participants expressed a loss of identity as they were confronted with physical disability and a 'forced new identity'. Sports participation enabled individuals to re-establish or restore their identity as an athlete post-SCI. Additionally, Wang et al. (2017) found disentangling from a disability label and 'finding the previous self' to be important as part of 'overcoming the suffering' associated with the SCI and achieving PTG. Similarly, Griffiths and Kennedy (2012) found maintenance of life goals, values, and sense of self, and thus not having their identities defined by SCI, was important in experiencing positive psychological outcomes. The studies suggest SCI has the potential to disrupt the individual's life goals and sense of identity, triggering cognitive and behavioural processes as the individual seeks to understand the impact of SCI on these areas. Disentangling from a disability label and maintenance of previous self, as part of these processes, is important in experiencing PTG.

The notion of 'self' is defined as a concept constructed through reflexive interactions with others (Clarke and James, 2003). In line with this, the process of reconstructing one's identity following SCI has been shown to occur as the individual interacts with others in their immediate and distal social environments (Dickson et al., 2008; Chun and Lee, 2010). Dickson et al.'s (2008) findings show experiencing discrimination and stigma, with imposed loss of social status and equality, could contribute towards the shattering of the individual's sense of former identity, and result in negative psychological outcomes. Whereas continued acceptance and belonging within the family, protecting aspects of valued identity, has been found to support the development of PTG (Chun and Lee, 2008, 2013; Crawford et al., 2014). Khanjani et al.'s (2017) study also shows returning to work as a valued team member can be helpful in maintaining a valued social identity, as part of the SCI experience of

PTG. Interactions with peers are also important for reconstructing a sense of identity post-SCI as they can provide a source of information about future possibilities, enabling the individual to re-appraise and reconstruct beliefs about disability and the impact on identity and life course (Chun and Lee, 2008).

Relationships have also been shown to be an important facilitator through supporting the cognitive and behavioural processes of PTG (Chun and Lee, 2008; Griffiths and Kennedy, 2012). Previous qualitative research shows opportunities for self-disclosure with others enable cognitive processing following injury and contribute towards the experience of PTG (Chun and Lee, 2008, 2010). Moreover, Dong et al. (2014) found opportunities for self-disclosure were associated with higher levels of PTG and that the content of self-disclosure is important. Participants who were able to talk about the emotional impact of the injury (rather than facts of the injury) were more likely to experience PTG.

Support from others has also been found to be important in enabling coping and providing motivation to continue to live well. Griffiths and Kennedy (2012) found support to be important in bolstering the individual's belief that they can overcome difficulties. Additionally, practical support and encouragement to explore the physical self has been shown as important in the individual being able to enhance independence, re-assess capabilities and re-integrate into the wider social world (Wang et al., 2017; Chun and Lee, 2010). Advice from a lived experience perspective has also shown as helpful in enabling the individual to manage difficulties associated with SCI, enabling the individual to live well (Khanjani et al., 2017).

The current research base indicates mechanisms through which relationships might support PTG following SCI, including supporting a sense of belonging and acceptance, enabling opportunities for self-disclosure, coping support and advice, and facilitating self-exploration. However, systematic examination of these mechanisms is limited in the current research base.

**Aims of Present Study**

There are several qualitative studies that have looked at the experience of PTG following SCI, in a number of countries and cultures. However, knowledge of the role of relationships and social support in facilitating the development of PTG is limited within the current research. To date, only a small

number of studies have chosen to focus on the processes of PTG, and studies have not looked specifically at the role of relationships and support in the development of PTG following SCI. However, there is growing evidence to suggest relationships play an important role in facilitating PTG. Qualitative research investigating these processes would provide insights into these processes with clinical practice implications. Therefore, the aims of this qualitative study are:

1. To explore the role of relationships, including family, friends, and peers with lived experiences, and perceived support in PTG development following SCI;
2. To examine the interaction between relationships and cognitive processing in PTG development.

**Method**

Given the research aims were to understand the lived experience of PTG following SCI, and how this is supported and constructed within the individual's immediate social world, a constructivist grounded theory approach was appropriate (Charmaz, 2006, 2014).

**Recruitment**

The study was reviewed and approved by Cardiff University School of Psychology ethics board (reference EC.21.01.12.6220RA). Participants were recruited via a SCI charity website and social media page (Appendix M). Potential participants made contact via email and were provided an information form (Appendix N), and follow-up email or telephone call to assess eligibility (table 1) and facilitate informed consent.

**Table 1.** *Participant Inclusion and Exclusion Criteria*

| Inclusion Criteria | Exclusion Criteria |
| --- | --- |
| Individuals over the age of 18 living with SCI | Individuals with significant cognitive difficulties that would prevent being able to provide informed consent or recall experiences of living with SCI |
| Able to communicate in English | |
| At least one year post SCI | |
| Must have sustained their injury as an adult (16 years+) and received input from adult services at time of injury | Individuals who sustained their injury during childhood |
| Reports to have experienced some form of growth from adjusting to SCI | |

Seventeen individuals expressed an interest in the study. One person did not meet the inclusion criteria, two expressed an interest only and one cancelled their interview. Two people contacted the researcher after recruitment had closed. Eleven of those who expressed an interest took part.

**Data Collection and Procedure**

Semi-structured interviews, completed via Skype, were used to collect data. One interview was conducted via telephone at the participant's request. Participants were given an opportunity to ask any remaining questions about the study, before being taken through the consent form (Appendix O) and providing consent verbally. The researcher signed the form to confirm given consent. Participants were asked to verbally complete a demographic form and psychological measures. Interviews were audio recorded and lasted between 39 and 66minutes (mean 55.33). At the end of the interview participants were provided with verbal and written debriefs (Appendix P). A risk assessment pathway was followed to safeguard participants (Appendix Q).

*Measures*

As part of situating the sample the following measures were used: 1) The Post Traumatic Growth Inventory Short Form (PTGI-SF, Cann et al., 2010); 2) The Patient Health Questionnaire-2 (PHQ-2, Kroenke et al., 2003); and 3) The Generalised Anxiety Disorder 2 Item (GAD-2, Kroenke et al., 2007). (Appendix S).

*Interview Schedule*

In line with a constructivist grounded theory approach an interview schedule was developed based on the extant research (Charmaz, 2006), including six stem questions (table 2) and further prompts (Appendix T). This was co-constructed in consultation with an individual living with SCI to evaluate the accessibility and resonance of the questions. This was also facilitative in assisting reflexivity as it helped the researcher reflect on how their expectations might influence the research.

**Table 2.** *Interview Schedule: Stem Questions*

| Area of Interest | Stem Question |
|---|---|
| Areas of PTG experienced | Could you tell me about any changes you have experienced following your SCI that you would consider to be positive? |
| Cognitive Processing of SCI | What helped you make sense of your SCI? |
| | What do you think helped you to experience the positive changes? |

| Influence of Support and Relationships | Could you tell me about any specific people who have influenced the way you see your SCI? |
|---|---|
| | Could you tell me about any significant interactions that have altered how you felt about your SCI? |
| | Could you tell me about whether you have experienced any changes in your relationships with others since your SCI? |
| Final Question | Is there anything which you would like to add that we have not covered or that might be useful to others who are adjusting to living with a SCI? |

**Participants**

Participants included four women and seven men, aged 24 to 86 (mean 43.82). All participants were of White ethnicity. Nine participants were British, one participant was Irish, and one participant defined their ethnicity as Mixed. Ten participants were living in the UK and one participant was living in Ireland at the time of interview. Participants had acquired SCI between the ages of 17 and 82 (mean 35.91). Participants were between 1 and 28years post SCI (mean 7.91). Injury was most commonly traumatic (8), including sports injury (4), motor accident (3) or fall (1). Three participants experienced non-traumatic SCI, caused by disease or deterioration.

Participants consented to complete brief PTG and mental health screening tools to contextualise data. PTG-SF scores ranged from 16 to 40 (mean 28.82) out of a total score of 50, and domain scores were lowest for spiritual change and highest for relating to others. PHQ-2 and GAD-2 scores varied between 0 and 6 out of 6 (PGQ-2 mean 1.18; GAD-2 mean 1.09) with most participants disclosing anxiety and depression below clinical threshold.

**Table 3.** *Participant Demographics*

| Name | Gender | Age | Age at Injury | Type & Level of SCI | PTG-SF | PHQ-2 | GAD-2 |
|------|--------|-----|---------------|---------------------|--------|-------|-------|
| Max | Male | 28 | 26 | T3 Incomplete | 33 | 1 | 0 |
| Dave | Male | 40 | 26 | T3 Complete | 23 | 1 | 1 |
| Pete | Male | 45 | 17 | T4 Complete | 38 | 0 | 6 |
| Harry | Male | 26 | 20 | C3 Complete | 29 | 1 | 0 |
| Polly | Female | 64 | 62 | C3-7 Incomplete | 40 | 0 | 0 |
| Tony | Male | 45 | 44 | T2-3 Incomplete | 27 | 4 | 2 |
| Lana | Female | 34 | 17 | T7 Complete | 38 | 0 | 0 |
| Ronnie | Male | 60 | 50 | L3-5 Incomplete | 18 | 6 | 0 |
| May | Female | 86 | 82 | T7 Incomplete | 25 | 0 | 2 |
| Thomas | Male | 30 | 29 | T12 Complete | 30 | 0 | 0 |
| Louise | Female | 24 | 22 | C7 Incomplete | 16 | 0 | 1 |

**Data Analysis**

A Constructivist Grounded Theory approach was used to analyse the data (Charmaz, 2006, 2014). The researcher first completed open coding (Appendix U), working systematically across the dataset examining the transcript line by line and assigning codes using participant's own words. Next focused coding was applied, taking the codes from a descriptive to conceptual level using the most frequent or significant codes for the research question. The researcher then looked across datasets to group together focused codes and create conceptual categories. Memo writing was used to capture thoughts and make comparisons and connections in the data (Appendix V). This supported the development of conceptual categories into an explanatory framework.

Data analysis and collection occurred contiguously to allow the researcher to reflect on initial ideas coming from the data, and to consider and refine the interview schedule to support emerging ideas. Data collection was paused after six interviews to allow the team to reflect on how the schedule was enabling the analytic process, and no changes were deemed necessary. However, ideas from the first round of interviews were used to initiate further prompts to deepen or find contrasting narratives. Data collection continued until interviews were felt not to provide any additional insights, indicating data saturation. The researcher kept a reflective journal, commenting on the influence of their own values and assumptions (Charmaz, 2014), to support reflexivity throughout the research.

**Data Quality**

Tracy's (2010) eight key markers for quality was used to consider and clarify how the quality of the research would be upheld.

Table 4. *Demonstration of Methods Used for Quality Control*

| Quality Markers (Tracy, 2010) | Method to meet guidelines |
| --- | --- |
| Worthy topic: *relevant, timely, significant, interesting, or evocative.* | Focus of the research has been determined based on gaps in existing literature and developments regarding PTG in the SCI field, and in collaboration with a Clinical Psychologist working clinically in SCI. <br><br> The research has provided new implications for clinical practice. <br><br> The relevance of the study is also evidenced by collaboration with SCI charity, who promoted the research on their websites, and with experts by experience. |
| Rich Rigor: *sufficient, abundant, appropriate, and complex theoretical constructs, data and time in the field, sample(s), context(s), data* | A significant sample size was recruited to provide rich and abundant accounts, as well as sufficient data to support emerging themes and constructs. <br><br> In-depth semi-interviews were conducted. Interesting ideas, and potential new themes, were explored further by the researcher. <br><br> Audio files were fully transcribed by the researcher to allow in-depth analysis. |

| | |
|---|---|
| *collection and analysis processes.* | In-depth analysis following Charmaz's (2006) approach was conducted. Theoretical saturation was reached. |
| Sincerity: *self-reflexivity and transparency.* | The main researcher kept a reflective journal (Appendix X) to note ideas as they arose throughout data collection and analysis, including reflection on how these related to the researcher's training, personal and professional experiences, and beliefs about the phenomena under study. Supervision was also utilised to discuss and reflect on these ideas.

A reflexive statement is given to provide a disclosure of values and assumptions allowing the readers to interpret the data and understanding in relation to the researcher's perspectives.

A clear description of the methods of data collection and analysis is given. Information is given to situate the sample.

Limitations of the study have been considered with the research team and recognised in the discussion section.

The research supervisors verified the stages of grounded theory were conducted as described. |
| Credibility: *marked by thick description, showing rather than telling, triangulation/crystallization, multivocality and member reflections.* | In depth illustration of the themes and meanings is provided in the results section. Examples of data are given to illustrate themes in the forms of quotes from multiple participants.

The researcher attended to difference in accounts and difference is shown within the write up with consideration to how this might be relevant to differences in culture, class, gender, race and age of participants.

Supervision with the research team was utilised to provide multiple perspectives on emerging ideas during data analysis. |
| Resonance - *research influences, affects, or moves* | The results section includes a rich description of themes intertwined with quotes in order to provide evocative representations of the findings. |

| | |
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| *readers, through evocative representations, naturalistic generalisation and transferable findings.* | The findings were discussed with a psychologist working within health psychology to assess resonance of the findings and transferability for clinical practice. |
| Significant contribution | Clinical implications for services and clinicians working in SCI are provided. Supervision from a clinical psychologist working clinically was utilised to consider the clinical relevance and implications of the emerging findings and guide thinking to ensure the research provided clinically relevant findings. The researcher aims to publish the study findings in the Journal of Health Psychology and disseminate the findings at relevant conferences to provide contribution to the SCI field. |
| Ethics | Procedural ethics – approval was granted by an ethics committee and procedures were in line with the BPS Code of Human Research Ethics (2014). Situational ethics – any unforeseen ethical dilemmas were dealt with by acting in a way that prevented harm and maintained the safety and dignity of the participant and were discussed with the wider research team. A Risk Assessment Pathway was developed and followed throughout. Relational ethics – those expressing an interest in the study were treated with kindness, respect and reciprocity, the researcher responded to potential participants in a timely manner and worked with their needs and preferences to facilitate participation. Exiting ethics – participants have been offered an overview of the findings, which will be provided in a user-friendly format and in a timely manner now the study has reached completion. |
| Meaningful coherence: *(1) study achieves what it sets out* | The research question, design and analysis chosen are in line with a constructivist grounded theory approach. |

| | |
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| *to do; (2) data collection and analysis fit with the research goals and chosen framework; and (3) the literature, question, findings, and interpretations meaningfully connect.* | Key spinal cord literature relevant to PTG, adjustment and relationships has been drawn upon in the literature review, and the findings of the study are discussed in relation to how the findings fit within the current research base. A clear statement regarding the aims of the study has been provided and the findings are discussed in relation to these aims. |

**Reflexive Statement**

The main researcher is a 32-year-old white British woman, with no personal experience of SCI. She is a trainee clinical psychologist with experience of working with individuals experiencing acquired impairment or disability within neurorehabilitation, though not specifically with individuals with SCI. Through her clinical experience she has seen the challenges of adjusting to life changing health events for individuals and their families and observed associated growth experiences. Throughout her training and clinical work, she has employed different therapeutic and theoretical approaches but finds herself most influenced by trauma recovery, attachment, and systemic/relational approaches.

Research supervisors were Clinical Psychologists specialising in health, including SCI. Jennifer Moses has worked clinically with people with SCI in rehabilitation for more than 25years and provided academic supervision for the project. Her academic and clinical reflections derived from interest in post-traumatic growth and depreciation and social support processes following SCI. Andrew Thompson has academic and clinical expertise in psychological aspects of long-term conditions, particularly conditions affecting appearance and body-image. He contributed reflections on the findings' resonance with mindfulness, Acceptance and Commitment Therapy (ACT), and self-compassion. Finally, Anna McCullough is a Clinical Psychologist practising in physical health conditions. Her reflections were informed by clinical understanding of how relationships and social support operate systemically to influence well-being and condition management practices. She made reflections on the method and outcomes and links to therapy frameworks including ACT.

The main researcher conducted the data analysis independently and the steps were verified by the supervision team. Research supervision was utilised to discuss emerging ideas and themes from the

interviews and throughout the analysis process. This enabled the main researcher to explore and expand on emerging ideas, understand the relevance of the themes to clinical practice observations and assess how the interview schedule was supporting data analysis. Research supervisors also supported the reflexivity process by facilitating reflection about the influence of the researchers' own values and assumptions on the interpretation of the data, thus enhancing the main researchers' awareness of how the findings were being co-constructed between the participants and herself.

**Results**

Data analysis revealed how SCI initiated processes of PTG. SCI was described as a "*traumatic event*" that "*shakes up everyone's life*". This shook or interrupted beliefs about intended life course, relationships, and worldview, and thus could result in disrupted self-identity. It triggered examination of significant changes to the physical self and re-evaluating life, relationships, sense of self and future possibilities through cognitive (deliberate self-reflection, information seeking, and unconscious appraisal processes) and behavioural processes (exploring limitations and capabilities). Participants described learning from the challenges and changes of living with SCI through these processes, enabling them to reconstruct ideas about self, world, others, and disability and identify ways they experienced growth. Emotional coping and acceptance of self with disability appeared to support these processes.

Three themes were revealed through data analysis representing the inter-related and overlapping ways relationships with close others and interactions with peers influence the core processes of PTG following SCI: 1) a Safe Place to Get Back on Your Feet, 2) Accepting and Valuing Me; and 3) Enabling Learning and Independence.

*Table 5. Themes and Subthemes*

| Master theme | Subthemes |
| --- | --- |
| A Safe Place to Get Back on Your Feet | "Being There for Me" |
| | Availability for Emotional Disclosure |
| | Facilitating Emotional Coping |
| Accepting and Valuing Me | "I am still seen as me, not disabled me" |
| | Acknowledging the differences |
| | "Welcome to Our World" |
| | "They have changed my perception of what being disabled is" |
| Enabling Learning and Independence | "Nurturing My Independence" |
| | "Making Sure I Am Making the Most Out of Life" |
| | 'It's Troubleshooting with People Who Understand' |

**"A Safe Place to Get Back on Your Feet"**

This theme captures the role close relationships play in providing emotional support and comfort following SCI. Participants discussed initial feelings of loss and grief and being in states of "*survival*" (Louise). Close relationships could provide feelings of safety and comfort during this period, as well as providing "*space*" (Dave) to come to terms with the impact of SCI on their life, thereby enabling cognitive processes of PTG. For some, close relationships also enabled opportunities to discuss experiences of loss and emotional struggle, allowing them to work through these experiences in a supportive environment.

*"Being There for Me"*

This sub-theme reflects the importance of close others "*being there*" for them, providing support and comfort following SCI both in the early stages and as a continued source of support, in facilitating the experience of PTG. Participants discussed how traumatic events leading to SCI, or sudden news of life-changing circumstances can lead to more open displays of affection and care (such as, making life changes to be with the person or rushing to the person's side in hospital). Open displays of affection and "*being there*" at crucial times acted to provide a sense of comfort helping to soothe emotions:

> *"A friend went AWOL from the army to come see me for like a week and he nearly got arrested for it, stuff like that you are like what?....that's quite a reassuring thing knowing that you are surrounded by friends that would go to the ends of the earth for you" – Harry*

> *"I was having brain injury and drug induced delusions and I really couldn't make sense of the world…then I knew where I was and what I was doing and the people around me I suppose just helped at that point, helped me be where I was easier, more comfortably" – Max*

It was also helpful to know that although "*a lot of things are going to change, some things are not going to change"* (Harry), suggesting that others being there for them in the early stages helped to protect against experiencing further losses.

Several participants talked about moving back in with parents or having family move in with them in the initial months when they returned home after rehabilitation. They cited the benefits of having family with them to provide care and support in creating feelings of safety and protecting mental health:

"*By having no concern that [my wife] would be there and would just deal with whatever because that's how I would be with her its makes coming home and trying to deal with things easier, you are not worried about the little things you know, that's ok, in hand*" – Thomas

Having people around them that provided comfort and practical support, enabled participants to feel in a less worrying, "*settled place*" (Dave). This was helpful in facilitating cognitive processing in the development of PTG.

Some participants recalled others' choices to "*stick by you*" (Dave) and commit despite significant changes to relationships (e.g. roles, reciprocity, intimacy), which had acted to solidify and strengthen some relationships:

"*It's an acid test is a spinal cord injury… a bit like an engagement in a way because there's a yes or no question that is implicitly asked do you want to be with me yes or no? And everyone, your friends, your partner, everyone makes that choice…it means that I know that everyone in my life really wants to be*" – Max

"*My Mrs more or less looks after me 24/7, I thought she would actually begin to not want to do that and hightail it out the door or whatever but she's solid as a rock and I cannot sort of like explain how not grateful but how much of a sense of oneship I suppose it gives me with my Mrs*" – Ronnie

Through demonstrations of love and *"being there"* for them post SCI participants described experiencing increased "*closeness*" (Polly) and understanding of how much we *"meant to each other"* (Thomas), enabling the development of PTG within relationships.

*Availability for Emotional Disclosure*

Participants talked about the importance of knowing they could express their emotions or talk about their experiences following SCI with friends and family. For some this facilitated emotional disclosure and opportunities to process feelings of loss and make sense of the changes:

> *"Happy to talk about my emotions and stuff, if I feel like crying I will just cry, I don't care, and I have been quite open about that, especially amongst my closest friends, how I deal with stuff or when I have had a rubbish day" – Thomas*

> *"When I'm feeling really down I can talk to my Mrs, I know that" - Ronnie*

Choosing to talk about difficult experiences and emotions was important for participants in being able to evidence emotions, whilst learning not to let them overwhelm or overtake them. For some having others be emotionally available for them opened them up to be more emotionally available to others:

> "*I have probably got a lot more empathy for other people now than I used to, because I guess I need a lot more empathy for myself*" – Harry

In contrast, Pete's experiences provide insight into the impact of being in a familial environment where he felt his parents were not as emotionally available. Pete discussed being influenced by his mother's approach to her own disability of *"just cracking on with it"* and his family's tendency to focus on moving forward without addressing the experience of pain and loss that came with the life-changing circumstances of his injury. Pete disclosed how his dad deflected his emotions and seemed incapable of addressing them. This seemed to endorse using coping strategies that involved pushing away emotions, through alcohol use, rather than being able to discuss and make sense of the emotions and changes:

> *"He would find me asleep in the kitchen just absolutely slaughtered and just tell me to go to bed and now I wish he had spoke to me about it, why was I going out and getting hammered, why was I coming home falling asleep in the kitchen so drunk not even being able to go to bed"*
> – Pete

Pete seemed to have struggled with living with SCI for many years. His engagement with peers rather than family seemed to be the turning point in the development of PTG for him.

*Facilitating Emotional Coping*

Some participants talked about how close relationships supported them to manage emotions by prompting use of coping strategies, which appeared to be important for recovery from bad days and continued motivation:

> *"[my friends and PAs] have got me through so really shitty times, you know I wouldn't go as far as to say suicide per say but there were some points where I was like I really can't be bothered to go on living…having those people be like "no, shut up, here lets go out, let's go and do this", or "didn't you love painting in hospital lets go and buy some art stuff, let's go start painting", you know having those people around at the right time is everything" – Harry*

**Accepting and Valuing Me**

This theme relates to how relationships and interactions with close others and peers can help shape beliefs about the impact of SCI on the concept of self-identity, in ways that enabled the individual to learn and experience PTG. This was discussed in the context of societal beliefs of disability as representing vulnerability, incapability, and weakness, which could threaten continuity of self and feelings of acceptance within their social world. Participants talked about the importance of close relationships in seeing '*a continuation of the same person'* (Harry), which appeared important in maintaining a continued sense of self and self-acceptance following SCI. It was also important for close others to accept and acknowledge a changed physical body so the individual could be open to the impact of SCI on the self and relationship dynamics. Peers were also seen as important catalysts in enabling acceptance, and in providing individuals opportunities to reconstruct their beliefs about disability and to rebuild a sense of self or identity. Relationships and interactions appeared to be important in facilitating acceptance of self with a disability, thus providing a foundation for growth.

***"I am still seen as me, not disabled me"***

This sub-theme reflects how beliefs about self, were *"shaken"* due to the unexpected acquisition of a SCI, and a social label as a disabled person. For many this brought to the surface unconscious beliefs about disability as representing vulnerability, incapability, and fragility, which could present as a perceived threat to acceptance by others and imagined future or self-image. Participants were therefore required to make sense of how their ideas about disability might impact on their self-identity and identity in relation to others. Close relationships could be an important source of information in understanding and making sense of these beliefs:

> *"They just treated me like I was me, because I was, I am still me, just because I've broken my spinal cord doesn't mean that I'm a different person, I think maybe you grow to be a different person but you are a continuation of the same person…the first time that I realised I was going to be ok was when my, one of my best mates came into hospital to see me and was like of course it's you that's broken your neck Harry, honestly you always like attention don't you"* – Harry

Continuity of relational dynamics, humour in Harry's case, could be helpful in protecting continuity of self and shaping beliefs about the impact of SCI on the self, such as by learning that *"my body is not me"* (Lana). It could also shape ideas about how participants might be perceived by others. Harry's friends lightening the mood appeared to signal to him that others felt comfortable around him and saw him as someone who was emotionally resilient and able to manage the changes, rather than someone who needed to be protected from these realities.

In contrast, close others interacting with participants differently had the potential to highlight a changed self or a "*disabled me*", which could undermine the development of PTG. This appeared to be more likely if the individual responding differently was a particularly close person or if many others in their immediate social world responded to them differently, and the person felt unable to navigate these changes within the context of a secure relationship:

> *"Just trying to do daily things they were really worried, and I get why because I'm sort of almost could be seen as maybe like a bit of a broken human…I was like no, I'm going to tell*

*you to F off in a minute, just kind of that really, making sure I am still seen as me not disabled me" – Thomas*

Thomas' quote shows how close others worrying and fussing could be interpreted as perceiving him to be vulnerable or "*broken*". Other participants talked about this in terms of "*people having very low expectations of you*" (Lana), *"infantilising you"* by *"being too worried about everything" (Louise)* or *"fussing over me" (May).* These interactions appeared to highlight a disabled self or "*disabled me*", which could precipitate a negative self-image and undermine the experience of PTG. Thomas reported navigating this within a safe relationship through open discussion. He also talked of how his friends described him positively to others, revealing to him "*my friends see me as a strong individual rather than just a disabled man"*. Whereas in the context of Pete's relationships he felt this went unspoken and that this omission prevented him from feeling a sense of belonging to the working community that he valued, causing him to struggle with acceptance and rebuilding identity in positive ways:

> *"Because I'm disabled, they just put me down in that category and don't think of me as a person that's just like anyone else and you know I would have loved all my mates to go to the parents and relatives day at the spinal centre to educate them about me" – Pete*

### *Acknowledging the differences*

Though it was important to feel treated the same by close others, when altered functioning went unacknowledged in the relationship it could lead to the person experiencing difficulties with accepting a changed physical self:

> *"I didn't look after myself because my mates were treating me like I was just sat down" –* Pete

> *"I didn't identify as having a disability because all my friends were mobile, were able-bodied and they saw me as I was before it was fairly easy to pretend that my identity hadn't changed that much, it was when I moved at the point, and it was the first time that people saw my wheelchair before they saw me" – Lana*

Disability going unacknowledged within a relationship seemed to lead to the individual struggling to accept and integrate disability as part of their identity. Lana's quote suggests that navigating beliefs about disability within close relationships may be helpful for navigating these issues in the wider social world. Being enabled to discuss the impact of disability built confidence in others' acceptance.

Some participants talked of how close friends acknowledging a changed physical self and being *"willing to adapt, do something different to accommodate"* (Max) was important for not *"feeling ostracized"* (Max) from others:

> *"Just very much treating you like anyone else but also doing the kind of unseen things like if there was an evening out booked or something like that just maybe making, keeping an eye out to make sure things were going to be accessible or maybe having a chat to me beforehand"* – Dave

> *"Moving forward I have to have people who can accept that you know I've got problems and I can't just pop out with them to the shops or it's a huge thing, a wheelchair has to go, a change of clothes has to go, its huge for me to do anything small with a friend"* - Polly

Whereas participants where this was not discussed or acknowledged felt they had to try to *"live life like an abled-bodied person"* (Pete) to retain their friendship group, which could lead to difficulties learning to rebuild life with SCI:

> *"There was one place in town that had an accessible bathroom I used to have to circle back constantly to be able to keep up with my friends and it was interesting because at that time I would have let bouncers or my friends or whoever lift me up stairs to get somewhere that everyone was going...you are so grappling with not wanting to be different that you will conform to just do whatever"* – Lana

Acceptance of changed physical body appeared to facilitate PTG as it prompted participants to start to make sense of the changes rather than wishing them away:

*"Probably the thing that sort of separates people from post-traumatic growth and not, is whether they are willing to embrace everything else and recognise that although it's a very difficult situation to be in, the best way to get out of it is to accept that its happened and work within your limitations"* – Harry

**"Welcome to Our World"**

This sub-theme describes the value of connecting with peers, who have lived experience of SCI and "*know what it's like*" (Polly), in reducing feelings of isolation and cultivating a sense of belonging and acceptance in a social world, often portrayed as disabling and unaccepting of disability:

*"I ended up meeting this girl and she was amazing…she went to the disability officer and she tore shreds into him because he was in an apartment that wasn't accessible and every apartment should be accessible, and he just laughed at her like "welcome to our world" you know but it was really refreshing at that time, to meet someone else who was like what the hell is wrong with this world"* – Lana

For some this community of peers enabled them to find acceptance of disability, and acknowledgment of the difficulties they faced with access and disablement. For example, Pete had strongly held beliefs about how disability was perceived in the working community where he grew up. He had initially rejected engaging with a community of peers when he left hospital. However, after meeting a peer in work he was able to start to integrate into this community and begin to challenge ideas about his own acceptability, which was the catalyst of his experience of PTG:

*"I said they want me to go on this course with this charity with all these disabled people and I said 'I don't really want anything to do with that' and he turned around and he said 'do it, it will change your life'…and I did it and I came back a different person… then I met a load more people with disabilities, if one of us had a bowel accident we all laughed about it, the banter just made it more acceptable for having a disability"* – Pete

***"They have changed my perception of what being disabled is"***

This sub-theme represents how meeting others with disability prompted participants to re-assess their beliefs about their current circumstances, disability, and potential future. Some participants talked about how stereotypes represented in the media could influence ideas about future opportunities and societal acceptance. Both Lana and Thomas observed reporting of the Paralympic movement had created a *"superhuman"* (Lana) identity for disabled individuals. This was contrasted with ideas about *"angry wheelchair users"* (Lana) or *"those who moan…and complain about everything*" (Thomas). These stereotypes of disabled people were seen as reductive and to potentially narrow aspirational possibilities:

> *"I think it can create a bit of an unrealistic level, most people don't aspire to climb mountains all the time, or be TV presenters and stuff, you know actually like if you've had a spinal cord injury you just want to live a normal life again….it's by speaking to everyday people living with a spinal cord injury where I have learnt the most"* - Thomas

This was also evident in other participants narratives, where they described how meeting others with disability was helpful in challenging negative beliefs about possibilities and starting to understand what life could be with SCI:

> *"She was planning on taking her entire family on a cruise…I was amazed that she could have what appeared to be almost a normal life with this spinal injury…it was completely affirming that life can go on"* – May

> *"I met this guy [with SCI] at work, he flies all over the world and my influence, my contact with him in hearing that…you know drove me on because if he can get on a plane and do that I can get on a train and go to London and by the way spinal cord injury you are coming with me"* – Pete

Meeting and developing friendships with others with disability living everyday lives, achieving things they wanted to achieve, and not being defined by a disabled identity was also important for some participants in reconstructing a sense of identity post-SCI:

> *"I've certainly met a few people through wheelchair rugby that have really not let their accident or their sort of spinal cord injury define them, people who have gone on to be really successful in their own field despite all of that sort of thing, kind of showed me that it was possible"* – Harry

> *"Took a long time for me to figure out who I was but through meeting other people with disabilities…that community of people helped me construct who I was and get a better sense of what this world looks like"* – Lana

**Enabling Learning and Independence**

This theme refers to the ways in which participants described how close others helped them to learn to live well following SCI through enabling independence, exploring boundaries, and connecting with values and hobbies. This was important in enabling the behavioural processes of PTG and revising beliefs. Peers were also important in problem solving, empowering participants to manage SCI more independently and scaffolding them to make gains.

***"Nurturing My Independence"***

Participants talked about the role of close others in enabling their independence, particularly initially when they were trying to understand a changed body. A gradual process of becoming more independent was reported, moving from a position of being cared for to being enabled to do things for themselves as their confidence and stamina grew:

> *"In ICU I was a baby having my bum wiped and I was learning to breathe and all that stuff and then in rehabilitation I was a child and I was learning to do things for myself and then teenager at my parents' house again because my independence had to be nurtured again and*

*they were really good at that the first time and they were really good at that the second time too" –* Max

Max related these stages to childhood development and how those around him gradually enabled and encouraged him to do more, matching this to his recovery needs. As part of this participants discussed the importance of collaborative support when they pursued independence in the community:

*"Building up your confidence for using things like public transport and like going to the shops and stuff like that you know I think that would have been a lot more daunting without kind of family members around and you know people who would kind of be there to support you to do stuff that you were worried about" –* Dave

The world was often referred to as being inaccessible and disabling, so having close others who could assist if things went wrong, helped to provide safety, and improved confidence in navigating challenges.

Being enabled to demonstrate independence in everyday and household activities was felt to be important in exploring and understanding physical and psychological capabilities:

*"Just do it, washing, ironing, cooking, cleaning as best as I can and stuff like that, so yeah its taught me that I have got, I've learnt about myself how more determined I can be"–* Tony

*"[my husband] was reluctant to share any chores with me because he knew he could do it better and he just wanted me to be looked after…I knew I could do these things but there's a difference between having to do them and knowing you can" –* May

May felt her ability to exert autonomy and contribute to the household was hindered by her husband's wish to care for her. She described surprise at what she could do when she was able to explore this, which enabled her to reconstruct beliefs about self and disability as part of her experience of PTG.

***"Making Sure I Am Making the Most Out of Life"***

This subtheme refers to the role of close others in encouraging and enabling participants to connect with valued activities, which appeared important in understanding physical capabilities and limitations, as well as rebuilding beliefs about self-identity. Participants talked of how close others enabled them to connect with valued activities and hobbies, through providing physical support, encouragement, and creative adaptations:

> *"Friends who helped me go on stupid adventures and things like that, who have in their own way got over their own squeamishness and help me with things that we would not normally ask each other to help...empty my piss bag and carry me up a tree on their back"* - Louise

> *"A really good friend of mine who is a very talented music tech spent about a year and a half trying to invent an instrument that I could play, that was pretty special, didn't quite get it to work in the end but you know it was sort of the thought of that and the effort"* – Harry

Both quotes show the role of others encouraging and enabling participants to find new ways to connect with valued activities, which could reinforce a continued sense of self whilst allowing exploration and acceptance of limitations. Lana also talked of the importance of her parents enabling her to continue pursuing competitive horse riding, despite knowing it was unlikely to be possible, in facilitating the acceptance process and in experiencing growth in self-identity:

> *"They knew that I wasn't going to be able to do the dressage...but it was all part of the process of trying to do it and then accepting that it wasn't going to happen in the same way, if I had rushed that process I think it would have just shattered that old sense of who I was, and I would have really struggled, I think it would have interrupted that growth"* – Lana

***'It's Troubleshooting with People Who Understand'***

This sub-theme reflects how participants use interactions with peers to learn how to live well with SCI through observing peers or eliciting advice and information from them about overcoming problems. Participants talked about shortfalls in NHS services, such as finding information inaccessible,

inconsistent, or too "*clinical*". Information from peers was often more valued due to a shared skill set, purpose, and vocabulary:

> *"You do get erectile dysfunction because the blood flow isn't the same as it was, so you use certain equipment for that and all the personal information that they give you, it's a wealth of information…you get help if someone has been through it before" - Tony*

Learning from peers was seen as important in the development of PTG as it "*arms you with the knowledge*" (Thomas) to navigate NHS systems and "*helps people do what they need to do*" (Max), enabling participants to feel empowered to manage SCI. Participants also talked about learning about how they could connect with valued activities from peers:

> *"A guy who had an adapted van, and he was travelling all around South America so that was cool, he had a higher level injury than me so it was cool to talk to him and see how he did that to see how I would do that kind of thing in the future" - Louise*

Participants talked of wanting to use learning to help others with SCI, which appeared to be important for PTG as it enabled participants to turn something difficult, and the learning from this, into "*something positive*" (Thomas).

**Tentative Theoretical Model**

Diagrammatic representation of the findings, and tentative theoretical model, has been provided in figure 1. The model shows the psychological re-evaluation (cognitive and behavioural) processes of PTG found in the study, and how these might be triggered by the "shaking" of the individual's world, core beliefs and identity following SCI. The model also demonstrates how relationships and support might interact with and support these processes through providing safety, acceptance, and enablement. It should be noted that this model is offered tentatively and is based on the accounts and experiences of the 11 participants who took part in the study. Further testing empirically and cross culturally is needed to understand the relevance of the model to a wider population of individuals living with SCI.

**Figure 1.** *Diagrammatic Representation of Findings*
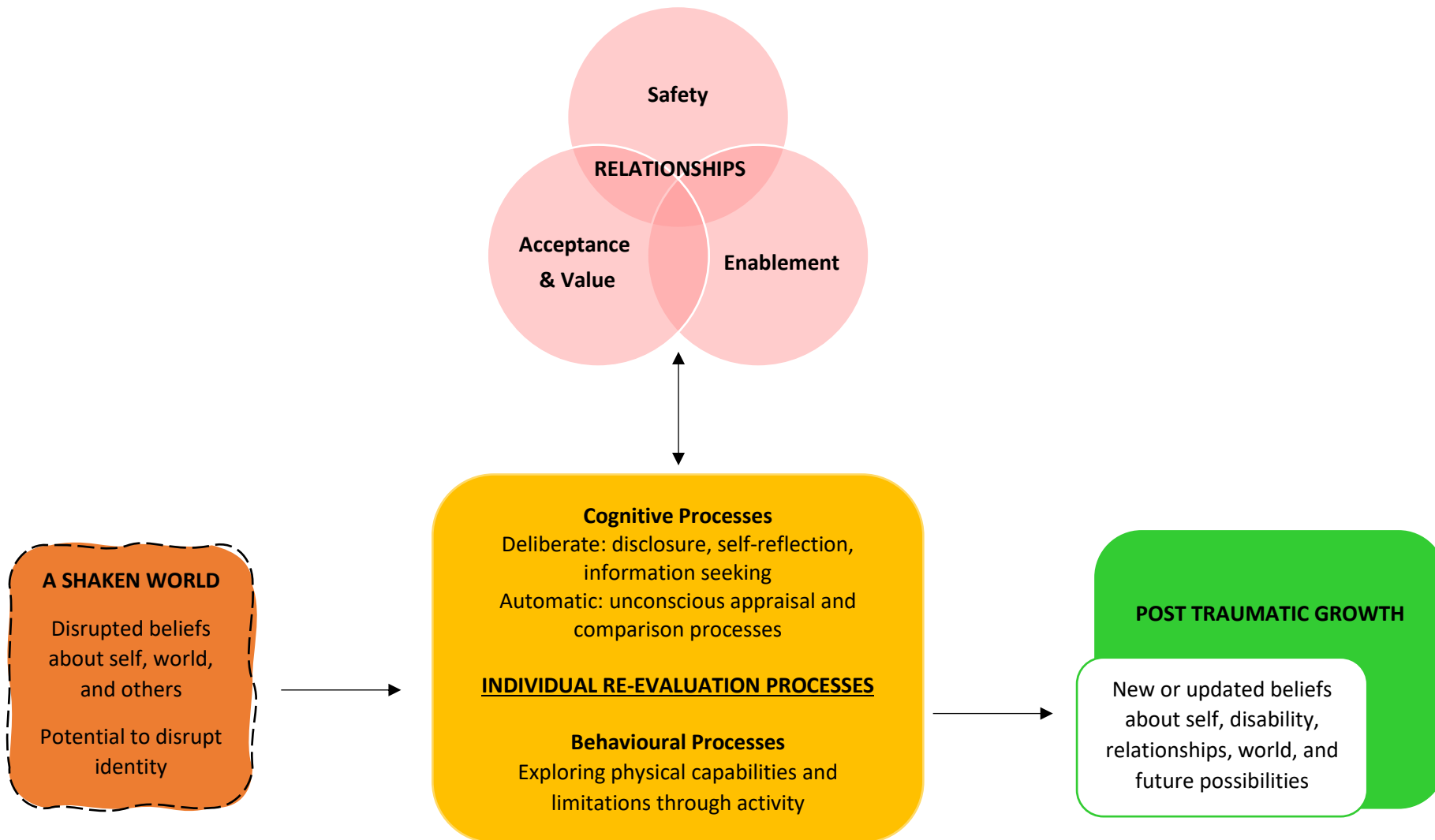
**Discussion**

The study explored the role of relationships and perceived support, and how this interacts with cognitive processing, in PTG development following SCI. The findings provided insights into the core processes of PTG and how these might be supported by relationships through safety, acceptance, and enablement of independence.

The study showed the processes of PTG to be triggered by the "shaking" of the individual's life and world as they faced life-changing injuries and confronted beliefs about disability; in line with Bury's (1982) concept of 'biographic disruption'. This appeared to result in "shaken" beliefs about self, relationships, and imagined future, leading to cognitive and behavioural re-evaluation processes as the individual rebuilt these beliefs. In rebuilding beliefs participants could experience PTG in many areas of their life, including strengthened relationships, new understanding of disability, and identity development; in line with Tedeschi et al.'s (2018) PTG model.

Consistent with Chun and Lee (2008, 2010, 2013) and Wang et al (2017) the findings showed close relationships and interactions with peers could play a multi-faceted role in supporting the development of PTG. Relationships could function to enable the processes of PTG through the provision of support, as well as influence the rebuilding of beliefs in the implicit meaning that was taken from interactions; providing support for Tedeschi et al.'s (2018) model.

The first relational theme showed how close relationships can promote emotional coping and provide a source of comfort and safety in times of significant uncertainty and distress. This was shown to enable cognitive processing through the management and soothing of emotional distress. These findings extend previous research into PTG following SCI. Tedeschi et al. (2018) recognise how social support can provide sources of comfort following trauma, however expansion of how comfort supports the processes of PTG is not provided. An explanation could be derived from Polyvagal Theory (Porges, 1995), where social safety is hypothesised to shut down the 'fight or flight' stress response, thus enabling more effective cognitive processing of trauma. Close others were also shown to directly facilitate cognitive processing by providing opportunities for emotional disclosure in a safe

environment; in agreement with Chun and Lee's (2008, 2010) findings and Tedeschi et al.'s (2018) model.

Tedeschi et al. (2018) see the role of deliberate rumination as a core facilitator of updating core beliefs as part of PTG. However, the findings of this study show this may play a lesser role in PTG following SCI than the model would predict. Updating of beliefs about self, world and others appeared to occur in less deliberate ways as participants interacted with important others in their social world, and as they engaged with behavioural processes of exploring physical capabilities. Relationships were seen as important in facilitating behavioural processes through encouraging independence and exploration of physical boundaries, and in understanding capabilities and limitations post-SCI. In line with previous research (Crawford et al., 2014), this was seen as important in connecting with the previous self and in developing new beliefs about self, disability, and future possibilities. Peers could also play a role in the provision of information from a lived experience perspective enabling individuals to better manage disability and rebuild ideas about the future; similar to findings from Chun and Lee (2008). Opportunities to support peers through their own learning could provide a positive way to use difficult experiences.

The findings showed SCI could trigger unconscious beliefs about disability, which required the individual to make sense of the impact of a "disabled me" on beliefs about self, world, and others. This was shown to occur as the individual interacted with their social world and took implicit meaning from interactions. Close relationships played a significant role in how participants made sense of acquired disability on the concept of self. Continuity of relational dynamics and "*being seen as the same*" as pre-injury was important in retaining continuity of self as separate from physical function. Previous research shows loss of sense of former identity can be a contributor to negative psychological outcomes (Dickson et al., 2008); therefore, arguably being able to retain elements of previous self is important in protecting against negative outcomes and establishing a basis for understanding change and potentiating growth. Furthermore, the experience of PTG following SCI has been associated with retaining or 'finding the previous self' (Crawford et al., 2014; Wang et al., 2017; Griffiths and Kennedy, 2012). Relational dynamics were also seen as important for reinforcing ideas about strength and capability, versus

vulnerability and incapability, which appeared to enable participants to challenge beliefs about the way they would be perceived with visible disability and develop PTG in terms of beliefs about inner strength.

Additionally, acceptance of self with disability was found to be important in readying the person to explore and make sense of the changes, thus enabling the person to explore and reconstruct beliefs as part of PTG. Previous research also shows the importance of acceptance of disability in enabling PTG (Byra, 2016; Lin et al., 2013). Lin et al. (2013) hypothesise that acceptance creates the foundation for PTG as it provides readiness to reduce one's emphasis on physicality as a feature of one's own value which opens people up to appreciate other qualities. Relationships were shown to be important in supporting acceptance processes when close others acknowledged a changed physical self, were open to talk about this and willing to adapt activities to accommodate the individual's needs. Whereas peers could support this process by exemplifying what was possible following SCI, facilitating new beliefs about disability and future possibilities. Peers also played a role in creating a feeling of acceptance in a wider world that often felt disabling, enabling them to understand the problem as an external societal issue rather than internalising self as unacceptable. These findings extend previous research.

Finally, experiences came from participants who experienced SCI between the ages of 17 and 82, indicating the possibility for individuals to experience PTG having acquired SCI at a variety of developmental/lifespan stages. The research also showed that PTG can be reported during the early stages of recovery (at the one-year point) for some, whereas for others they may take longer to adapt and recognise positive psychological changes. Rather than time since injury or age being the most significant determining factor for the experience of PTG, it appeared that psychological processes of acceptance, meaning making and behavioural exploration, and social processes of participation and social support were significant factors in the experience of PTG. Though the individual's current life goals may have been different at different lifespan stages, the psychological re-evaluation processes (outlined in the tentative model) an individual might go through to rebuild their beliefs, as part of the experience of PTG, appeared to be universal to all participants in the study regardless of age. This accords with previous research that shows no association between age or time since injury and wellbeing post SCI (Barker et al, 2009).

**Limitations and Future Research**

Themes derived from the experiences of 11 individuals living with SCI. Their interviews provided rich data which was analysed using grounded theory methodology to enable the development of a tentative theoretical model. Study findings support and extend previous research and resonate with themes encountered in SCI clinical practice. However, all participants were of White ethnicity and predominantly British (9/11), thus the results may be culturally specific. Further research would be beneficial in exploring the influence of relational dynamics in other cultures on the experience of PTG following SCI.

One potential limitation of qualitative research is the potential for researcher bias. The position taken by Charmaz's (2014) social constructionists' approach is that of the interviews being co-constructed between participants and researcher. Therefore, recognition is given to how the researchers' own interests and experiences might influence the findings. Several strategies were taken to reduce the potential for bias, and/or to provide transparency about the data analysis process. A reflective statement is offered to enable the readers to interpret the results with an understanding of the researchers' experiences and theoretical position towards attachment and systemic/relational ideas. A reflective diary was kept, consultation with a service user was utilised as part of developing the interview schedule and supervision assisted the researcher to be aware of their own biases and the influence this might have on the data collection and analysis processes, enabling a more open stance from the researcher. These strategies helped to reduce potential bias.

The study looked at the role of relationships in the development of PTG from the point of view of the individual living with SCI. Dorsett (2001) describes the disruption caused by SCI to be like a '*boulder dropping into the lake*', whereby the impact of SCI '*ripples*' beyond the individual to the wider family and social network. This has the potential to disrupt coping and beliefs of those in the wider system, therefore impacting on how the individual adapts and makes sense of the changes following SCI. Further qualitative research looking at the development of PTG from the point of view of couple

dyads or families would aid understanding of PTG processes, as well as providing insights into co-constructed meaning making processes within family systems.

**Clinical Implications**

The study provides implications for clinical practice. Firstly, it could be beneficial during rehabilitation for patients to be supported to explore unconscious beliefs about disability and how these influence beliefs about self. The Social Graces model (Burhnham, 2012) may offer a useful tool in exploring different aspects of an individual's identity (such as race, religion, culture, class, ability, age, etc.) and how this might influence adaptation and making meaning post SCI. Psychoeducation and intervention for those struggling with self-identity or self-image could draw on Cognitive Behaviour Therapy and/or Acceptance and Commitment Therapy techniques and provide a safe space for exploring unhelpful cognitions and behaviours toward rebuilding a positive self-image and meaningful life.

Rehabilitation settings should be proactive in facilitating opportunities for close others to "be there" when the individual is in inpatient rehabilitation and by showing they value this partnership. With NHS services continuing to review and adapt in a COVID-19 context it will be important to continue to offer opportunities for families to "be there" for patients during inpatient rehabilitation, including through the use of remote technology. Specific interventions including Family Therapy or psychoeducation could be beneficial in creating an environment where the individual is enabled to feel safe, accepted, and express independence when returning home. Individual psychological work supporting the individual to navigate these difficulties, such as Interpersonal Therapy, might also be considered.

Moreover, healthcare services should consider how opportunities to learn from peers can be strengthened in collaboration with the third sector. During the COVID-19 pandemic opportunities for face-to-face peer support were diminished due to Government restrictions. Many participants talked about using online forums and social media, and attending video support groups, to continue to gain this support. As many individuals struggle to access physical groups due to physical impairment this could be a useful addition for services as part of offering a more accessible service. Services will need to evaluate the use of these means of support, in collaboration with service users, to understand the

effectiveness and useability of online platforms. Services should also look to collate and disseminate stories of everyday achievements as part of celebrating diversity in ways of living with SCI. Finally, the findings have implications for public health in illustrating wider representations of disability in media, workplaces and in communities to counter implicit bias.

**Conclusion**

The findings evidence core processes of PTG following SCI and show how relationships can support and influence these processes through safety, acceptance, and enablement. They suggest Tedeschi et al.'s (2018) model requires some revision when PTG processes operate following acquired disability. Better understanding of relational processes is important clinically for facilitating adjustment following SCI.

# References

Adler JM, Lakmazaheri A, O'Brien E, Palmer A, Reid M and Tawes E (2021) Identity integration in people with acquired disabilities: A qualitative study. *Journal of personality,* 89(1): 84-112. https://doi.org/10.1111/jopy.12533

Barker RN, Kendall MD, Amsters DI, Pershouse KJ, Haines TP and Kuipers P (2009) The relationship between quality of life and disability across the lifespan for people with spinal cord injury. *Spinal cord*, 47(2): 149-155. https://doi.org/10.1038/sc.2008.82

Bourke JA, Hay-Smith EJC, Snell DL, and DeJong G (2015) Attending to biographical disruption: the experience of rehabilitation following tetraplegia due to spinal cord injury. *Disability and rehabilitation*, 37(4): 296-303. DOI: 10.3109/09638288.2014.918188

Byra S (2016) Posttraumatic growth in people with traumatic long-term spinal cord injury: predictive role of basic hope and coping. *Spinal Cord,* 54(6): 478-482. DOI: 10.1038/sc.2015.177

Burnham, J (2012). Developments in the social graces: Visible-invisible and voiced-unvoiced. In Krause IB (Ed.) *Culture and reflexivity in systemic psychotherapy: Mutual perspectives*. London: Karnac, pp.139–160.

Bury M (1982). Chronic illness as biographical disruption. *Sociology of Health and Illness*, 5: 168–195.

Calhoun LG and Tedeschi RG (2001) Posttraumatic growth: The positive lessons of loss. In Neimeyer RA (Ed.) *Meaning reconstruction & the experience of loss*. American Psychological Association, pp. 157–172.

Cann A, Lawrence GC, Tedeschi RG, Taku K, Vishnevsky T, Triplett KN, Danhauer SC (2010) A short form of the Posttraumatic Growth Inventory. *Anxiety, Stress, & Coping*, 23(2): 127-137 DOI: 10.1080/10615800903094273

Charmaz K (2006) *Constructing grounded theory: A practical guide through qualitative analysis*. Chicago:Sage.

Charmaz, K. (2014). *Constructing grounded theory*. Chicago:Sage.

Chun S and Lee Y (2008) The experience of posttraumatic growth for people with spinal cord injury. *Qualitative Health Research*, 18(7): 877-890. DOI: 10.1177/1049732308318028

Chun S and Lee Y (2010) The role of leisure in the experience of posttraumatic growth for people with spinal cord injury. *Journal of Leisure Research,* 42(3): 393-415. https://doi.org/10.1080/00222216.2010.11950211

Chun S and Lee Y (2013) "I am just thankful": the experience of gratitude following traumatic spinal cord injury. *Disability and rehabilitation,* 35(1): 11-19. https://doi.org/10.3109/09638288.2012.687026

Clarke JN, and James S (2003) The radicalized self: the impact on the self of the contested nature of the diagnosis of chronic fatigue syndrome. *Social science & medicine,* 57(8): 1387-1395. https://doi.org/10.1016/S0277-9536(02)00515-4

Craig A, Tran Y and Middleton J (2009) Psychological morbidity and spinal cord injury: a systematic review. *Spinal cord*, 47(2): 108-114. DOI: 10.1038/sc.2008.115

Crawford JJ, Gayman AM and Tracey J (2014) An examination of post-traumatic growth in Canadian and American ParaSport athletes with acquired spinal cord injury. *Psychology of Sport and Exercise,* 15(4): 399-406. https://doi.org/10.1016/j.psychsport.2014.03.008

Denzin N (1992). *Symbolic interaction and cultural studies.* Oxford: Blackwell.

Dickson A, Allan D and O'Carroll R (2008) Biographical disruption and the experience of loss following a spinal cord injury: An interpretative phenomenological analysis. *Psychology and Health,* 23(4): 407-425. https://doi.org/10.1080/14768320701219136

Dong C, Gong S, Jiang L, Deng G, and Liu X (2015) Posttraumatic growth within the first three months after accidental injury in China: The role of self-disclosure, cognitive processing, and psychosocial resources. *Psychology, health & medicine*, 20(2): 154-164. https://doi.org/10.1080/13548506.2014.913795

Dorsett PA (2001). Spinal cord injury: how do people cope? (Doctoral dissertation, University of Queensland).

Griffiths HC and Kennedy P (2012) Continuing with life as normal: Positive psychological outcomes following spinal cord injury. *Topics in Spinal Cord Injury Rehabilitation,* 18(3): 241-252. https://doi.org/10.1310/sci1803-241

January AM, Zebracki K, Chlan KM and Vogel LC (2015) Understanding post-traumatic growth following pediatric-onset spinal cord injury: The critical role of coping strategies for facilitating positive psychological outcomes. *Developmental Medicine & Child Neurology,* 57(12): 1143-1149. https://doi.org/10.1111/dmcn.12820

Khanjani MS, Younesi SJ, Khankeh HR and Azkhosh M (2017) Exploring facilitators of post-traumatic growth in patients with spinal cord injury: A qualitative study. *Electronic Physician,* 9(1): 3544 – 3553. Doi: 10.19082/3544

Kroenke K, Spitzer RL, Williams JB (2003) The Patient Health Questionnaire-2: validity of a two-item depression screener. *Medical Care,* 41(11): 1284-1292. https://doi.org/10.1097/01.MLR.0000093487.78664.3C

Kroenke K, Spitzer RL, Williams JB, Monahan PO, Löwe B (2007). Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Annals of Internal Medicine,* 146: 317-25. https://doi.org/10.7326/0003-4819-146-5-200703060-00004

Krause JS, Newman JC, Clark JMR, and Dunn M (2017) The natural course of spinal cord injury: changes over 40 years among those with exceptional survival. *Spinal cord*, 55(5): 502-508. Doi:10.1038/sc.2016.159

Lin Ch-P, Wang Ch-Ch, Fujikawa M, Brooks J, Eastvold-Walton L, Maxwell K, Chan, F (2013) Psychometric validation of the brief adaptation to disability scale-revised for persons with spinal cord injury in Taiwan. *Rehabilitation Research, Policy, and Education*, 27: 223–31. DOI:10.1891/2168-6653.27.3.223

Porges SW (1995) Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A polyvagal theory. *Psychophysiology*, 32(4): 301-318. https://doi.org/10.1111/j.1469-8986.1995.tb01213.x

Tedeschi RG and Calhoun LG (2004) Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry* 15(1): 1-18. https://doi.org/10.1207/s15327965pli1501_01

Tedeschi RG, Shakespeare-Finch J, Taku K and Calhoun LG (2018) *Posttraumatic growth: Theory, research, and applications.* Routledge.

Tracy SJ (2010) Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative inquiry*, 16(10): 837-851. https://doi.org/10.1177/1077800410383121

Wang Y, Xie H and Zhao X (2018) Psychological morbidities and positive psychological outcomes in people with traumatic spinal cord injury in Mainland China. *Spinal Cord,* 56(7): 704-711. DOI: 10.1038/s41393-017-0044-0

# Appendices

**Appendix A:  Manuscript Submission Guidelines: Journal of Health Psychology**

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**Manuscript Submission Guidelines: Journal of Health Psychology**

This Journal is a member of the Committee on Publication Ethics

**Please read the guidelines below then visit the Journal's submission site http://mc.manuscriptcentral.com/jhealthpsychology to upload your manuscript. Please note that manuscripts not conforming to these guidelines may be returned.**

Only manuscripts of sufficient quality that meet the aims and scope of Journal of Health Psychology will be reviewed.

Please ensure that your manuscript is suitable for publication and completely free of errors before you submit. Please pay particular attention to SAGE guidelines on Authorship and the SAGE Correction Policy.

There are no fees payable to submit or publish in this journal.

As part of the submission process you will be required to warrant that you are submitting your original work, that you have the rights in the work, and that you have obtained and can supply all necessary permissions for the reproduction of any copyright works not owned by you, that you are submitting the work for first publication in the Journal and that it is not being considered for publication elsewhere and has not already been published elsewhere. Please see our guidelines on prior publication and note that *Journal of Health Psychology* **may accept submissions of papers that have been posted on pre-print servers**; please alert the Editorial Office when submitting (contact details are at the end of these guidelines) and include the DOI for the preprint in the designated field in the manuscript submission system. Authors should not post an updated version of their paper on the preprint server while it is being peer reviewed for possible publication in the journal. If the article is accepted for publication, the author may re-use their work according to the journal's author archiving policy. If your paper is accepted, you must include a link on your preprint to the final version of your paper.

## 1. What do we publish?

### 1.1 Aims & Scope

Before submitting your manuscript to Journal of Health Psychology, please ensure you have read the Aims & Scope.

### 1.2 Article Types

The Editorial Board of the **Journal of Health Psychology** considers for publication:

(a) Full-length reports on empirical studies including intervention studies (up to 8,000 words counting 500 words per table and figure).

(b) Review articles including systematic reviews, narrative reviews, and theoretical contributions (up to 8,000 words counting 500 words per table and figure).

(c) Commissioned guest editorials (up to 1,000 words).

(d) Brief reports on empirical studies (up to 3,000 words counting 500 words per table and figure).

(e) Open peer commentaries on recent publications or topical issues (up to 1,000 words).

**Intervention studies**

Publication guidelines for intervention studies are published in Volume 15, Issue 1, pp. 5-7.

The Journal of Health Psychology welcomes research reports regardless of the direction or strength of the results. However the JHP will only consider reports of clinical trials that have been pre-registered at http://www.clinicaltrials.gov/ or http://www.controlled-trials.com/

**Article length and house style**

Articles should be as short as is consistent with clear presentation of subject matter. The word count for articles is 8,000 words, including footnotes and a reference list. Tables and figures count as 500 words each which should be attached as separate pages at the end. "INSERT HERE" signs should be noted within the text. The title should indicate exactly, but as briefly as possible, the subject of the article. It is essential that your literature review is completely up to date. Please check recent issues of the **Journal of Health Psychology** and other key journals to ensure that any relevant papers are cited. Papers that fail to do this will be rejected. An Abstract should be at the start of the manuscript and not exceed **150 words** accompanied by **five** keywords should be selected from the list provided on the JHP ScholarOne website. References are not numbered but appear in alphabetical order by first author surname.

To enable impartial review, all documentation must be fully anonymised. A common error is to specify you are the author of your past publications or to list institutions – these should all be replaced with Xs in the anonymised manuscript. Another common error is to include author names in headers such as: Smith et al. (anonymised copy). Manuscripts with any such identifiers will be rejected and are required to be re-submitted in fully anonymised fashion.

Smith (anonymize copy).doc

Such manuscripts will be rejected for re-submission in fully anonymized fashion.

**1.3 Writing your paper**

The SAGE Author Gateway has some general advice and on how to get published, plus links to further resources.

*1.3.1 Make your article discoverable*

When writing up your paper, think about how you can make it discoverable. The title, keywords and abstract are key to ensuring readers find your article through search engines such as Google. For information and guidance on how best to title your article, write your abstract and select your keywords, have a look at this page on the Gateway: How to Help Readers Find Your Article Online

**2. Editorial policies**

**2.1 Peer review policy**

Journal of Health Psychology operates a strictly anonymised peer review process in which the reviewer's name is withheld from the author and, the author's name from the reviewer. The reviewer may at their own discretion opt

to reveal their name to the author in their review but our standard policy practice is for both identities to remain concealed.

**2.2 Authorship**

All parties who have made a substantive contribution to the article should be listed as authors. Principal authorship, authorship order, and other publication credits should be based on the relative scientific or professional contributions of the individuals involved, regardless of their status. A student is usually listed as principal author on any multiple-authored publication that substantially derives from the student's dissertation or thesis.

**2.3 Acknowledgements**

All contributors who do not meet the criteria for authorship should be listed in an Acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, or a department chair who provided only general support.

Any acknowledgements should appear first at the end of your article prior to your Declaration of Conflicting Interests (if applicable), any notes and your References.

*2.3.1 Third party submissions*

Where an individual who is not listed as an author submits a manuscript on behalf of the author(s), a statement must be included in the Acknowledgements section of the manuscript and in the accompanying cover letter. The statements must:

- Disclose this type of editorial assistance – including the individual's name, company and level of input
- Identify any entities that paid for this assistance
- Confirm that the listed authors have authorized the submission of their manuscript via third party and approved any statements or declarations, e.g. conflicting interests, funding, etc.

Where appropriate, SAGE reserves the right to deny consideration to manuscripts submitted by a third party rather than by the authors themselves.

**2.4 Funding**

Journal of Health Psychology requires all authors to acknowledge their funding in a consistent fashion under a separate heading.  Please visit the *Funding Acknowledgements* page on the SAGE Journal Author Gateway to confirm the format of the acknowledgment text in the event of funding, or state that: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**2.5 Declaration of conflicting interests**

It is the policy of Journal of Health Psychology to require a declaration of conflicting interests from all authors enabling a statement to be carried within the paginated pages of all published articles.

Please ensure that a 'Declaration of Conflicting Interests' statement is included at the end of your manuscript and on the title page, after any acknowledgements and prior to the references. If no conflict exists, please state that

'The Author(s) declare(s) that there is no conflict of interest'. For guidance on conflict of interest statements, please see the ICMJE recommendations here

Please see the ICMJE Form for Disclosure of Potential Conflicts of Interest for more information about what items should be referenced in a Conflict of Interest statement.

**2.6 Research ethics and patient consent**

Medical research involving human subjects must be conducted according to the World Medical Association Declaration of Helsinki

Submitted manuscripts should conform to the ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, and all papers reporting animal and/or human studies must state in the methods section that the relevant Ethics Committee or Institutional Review Board provided (or waived) approval. Please ensure that you have provided the full name and institution of the review committee, in addition to the approval number.

For research articles, authors are also required to state in the methods section whether participants provided informed consent and whether the consent was written or verbal.

Information on informed consent to report individual cases or case series should be included in the manuscript text. A statement is required regarding whether written informed consent for patient information and images to be published was provided by the patient(s) or a legally authorized representative. Please do not submit the patient's actual written informed consent with your article, as this in itself breaches the patient's confidentiality. The Journal requests that you confirm to us, in writing, that you have obtained written informed consent but the written consent itself should be held by the authors/investigators themselves, for example in a patient's hospital record. The confirmatory letter may be uploaded with your submission as a separate file.

Please also refer to the ICMJE Recommendations for the Protection of Research Participants

**2.7 Reporting guidelines**

These guidelines relate to level of specificity, labels, participation, gender, sexual orientation, racial and ethnic identity, disabilities and age. Authors should also be sensitive to issues of social class, religion and culture.

The relevant EQUATOR Network reporting guidelines should be followed depending on the type of study. For example, all randomized controlled trials submitted for publication should include a completed CONSORT flow chart as a cited figure and the completed CONSORT checklist should be uploaded with your submission as a supplementary file. Systematic reviews and meta-analyses should include the completed PRISMA flow chart as a cited figure and the completed PRISMA checklist should be uploaded with your submission as a supplementary file. The EQUATOR wizard can help you identify the appropriate guideline.

**2.8 Research data**

At SAGE we are committed to facilitating openness, transparency and reproducibility of research. From the 1st July 2020 *Journal of Health Psychology* requires authors to share only those data described in the publication

and to submit a Data Sharing Statement alongside their submission. This should appear as a distinct sub-section at the end of the Method section of the manuscript.

The data must be uploaded to the SAGE Track submission system and will be uploaded to Figshare on publication. Please see section 3.4 for information on MIRD data sharing, data uploading and required files and the relevant Editorial for further details.

**2.8.1 Data sharing statement**

Data sharing statements must indicate the following: whether individual de-identified participant data (including data dictionaries) are shared; what data in particular are shared; additional, related documents that are available (e.g. study protocol and statistical analysis plan). The shared data should be useable and interpretable and include the following features:

1. If the data are in the form of a **statistical dataset**, variables must be labelled clearly, and variables that are stored as labelled numeric values must have associated value labels. The version of the software used to create the dataset must be stipulated (to clarify potential back-compatibility issues).

2. For data stored as a **spreadsheet, or delimited text**, an associated text file containing variable labels and, where appropriate, value labels for labelled numeric data.

3. **Missing data codes** should be documented, together with numbers of missing values for each variable. Ideally, missing data should be left blank, not assigned a pseudo-numeric code.

4. **Measurement units** and **measurement times** (where appropriate).

5. The dataset should be accompanied by a **codebook** giving means of continuous variables and frequencies of categorical variables, together with numbers of valid cases. This allows the use to check that they have read the data correctly into whatever software they are using.

6. Clearly spell out the **analytic procedures** upon which the submitted claims rely, and where possible provide access to all relevant analytic materials.

7. **Note** explaining the datasets will be available in Figshare and as supplementary material on the SAGE Journals platform.

**3. Publishing Policies**

**3.1 Publication ethics**

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*3.1.1 Plagiarism*

Journal of Health Psychology and SAGE take issues of copyright infringement, plagiarism or other breaches of best practice in publication very seriously. We seek to protect the rights of our authors and we always investigate claims of plagiarism or misuse of published articles. Equally, we seek to protect the reputation of the journal against malpractice. Submitted articles may be checked with duplication-checking software. Where an article, for

example, is found to have plagiarised other work or included third-party copyright material without permission or with insufficient acknowledgement, or where the authorship of the article is contested, we reserve the right to take action including, but not limited to: publishing an erratum or corrigendum (correction); retracting the article; taking up the matter with the head of department or dean of the author's institution and/or relevant academic bodies or societies; or taking appropriate legal action.

### 3.1.2 Prior publication

If material has been previously published it is not generally acceptable for publication in a SAGE journal. However, there are certain circumstances where previously published material can be considered for publication. Please refer to the guidance on the SAGE Author Gateway or if in doubt, contact the Editor at the address given below.

### 3.2 Contributor's publishing agreement

Before publication, SAGE requires the author as the rights holder to sign a Journal Contributor's Publishing Agreement. SAGE's Journal Contributor's Publishing Agreement is an exclusive licence agreement which means that the author retains copyright in the work but grants SAGE the sole and exclusive right and licence to publish for the full legal term of copyright. Exceptions may exist where an assignment of copyright is required or preferred by a proprietor other than SAGE. In this case copyright in the work will be assigned from the author to the society. For more information please visit the SAGE Author Gateway

### 3.3 Open access and author archiving

Journal of Health Psychology offers optional open access publishing via the SAGE Choice programme. For more information on Open Access publishing options at SAGE please visit SAGE Open Access. For information on funding body compliance, and depositing your article in repositories, please visit SAGE's Author Archiving and Re-Use Guidelines and Publishing Policies.

### 3.4 Transparency, Openness and Replication Policy

From the 1st July 2020, *Journal of Health Psychology* requires all authors to make their data fully accessible for all empirical research submitted to the journal for publication, and will only consider manuscripts which follow an open publication model with M = Mandatory, I = Inclusion (of), R = Raw, D = Data (MIRD). According to the MIRD model, all contributions of new qualitative and quantitative studies must fully document and share the raw data collected by the author(s) or their data collection team together with full details of the analytical procedures used. All data and analytical procedures must be sufficiently well described to enable a third party with the appropriate level of expertise to replicate the data analyses.

Authors must include their raw data and disclose the key aspects of the research design to every extent possible. The raw data and associated contextual information will be sent to reviewers, revised alongside the paper in every round and published alongside the paper (as an appendix or online supplement). In addition to publishing the raw data with the article, the data must be shared through a digital repository. Authors have to use data citation

practices that identify a dataset's author(s), title, date, version, and a persistent identifier, for example a Digital Object identifier (DOI).

The MIRD data sharing principle will be applied to all empirical studies, not only clinical trial report data:

1. As of 1 July 2020, manuscripts concerning clinical trials and other empirical studies that are submitted to *Journal of Health Psychology* must contain a data sharing statement as delineated in section 2.8 Research Data.

2. Any clinical trial that begins enrolling participants and is intended for later submission to *Journal of Health Psychology* must include a data sharing plan in the trial's registration.

It is *Journal of Health Psychology* policy that authors submit detailed information on empirical analysis alongside their written article. Authors should upload *at least* the first four files listed below when they submit their article.

- data set
- syntax file(s) from the software that has been used for the analysis;
- explanatory memo: explaining enclosed files/material and their content including help with regard to the analysis, which is important when non-standard techniques have been used; this may also apply to qualitative work; also some information on the software used for the analysis, including its version, is required;
- log file(s): output with results from the software that has been used for the analysis;
- Additional data analysis, including robustness analyses

Authors must provide a separate readme PDF listing all included files and documenting the purpose and format of each file provided, as well as instructing a user on how a replication can be conducted.

Making datasets publicly available is mandated by *Journal of Health Psychology* policy. Authors should ensure that they are uploading to the *Journal of Health Psychology* SAGE Track submission site, all data to do with their article. Once the article is accepted and published, it will be automatically uploaded to the Figshare repository.

The manuscript will not be moved through to Peer Review, or to Production until the editor is satisfied that all relevant data has been submitted alongside the manuscript. If cited data are restricted (e.g. classified, require confidentiality protections, were obtained under a non-disclosure agreement, or have inherent logistical constraints), authors must notify the editor at the time of submission. The editor shall have full discretion to follow the journal's policy on restricted data, including declining to review the manuscript of granting an exemption with or without conditions. The editor shall inform the author of this decision prior to review.

In addition to sharing the raw data, *Journal of Health Psychology* requires authors to delineate clearly the analytic procedures upon which their published claims rely and, where possible, provide access to all relevant analytic materials.

### 3.4.1 Replication studies

*Journal of Health Psychology* encourages the submission of replication studies regardless of whether or not the findings are statistically significant. Normally replication studies fall within of one or more of the following types:

*Theoretical replication:* The submitted article argues that the original theoretical model is missing at least one key element. The missing element(s) are addressed and included in the empirical analysis;

*Technical replication***:** The submitted article identifies faults in the original research design or analysis, thereby arguing that the original results might not hold; and/or

*Concept replication:* The submitted article questions the validity of the original study. An alternative measurement or operationalisation is proposed which yields different substantive results.

### 3.4.2 Preregistration of Studies and Analysis Plans

Researchers conducting experimental studies are encouraged to consider pre-registering their research design in advance with an established registry. *Journal of Health Psychology* will publish papers where authors indicate the conducted research was preregistered with an analysis plan in an independent, institutional registry (e.g., http://clinicaltrials.gov/) of studies involves registering the study design, variables, and treatment conditions. Including an analysis plan involves specification of sequence of analyses or the statistical model that will be reported.

For preregistered studies, the following requirements apply:

1. Authors must, in acknowledgments or the first footnote, indicate that research was preregistered in an independent, institutional registry (with name and link to its location) with an analysis plan;

2. The author must:

    1. confirm in the text that the study was registered prior to conducting the research with links to the time-stamped preregistration(s) at the institutional registry, and that the preregistration adheres to the disclosure requirements of the institutional registry or those required for the preregistered badge with analysis plans maintained by the Center for Open Science.

    2. report all pre-registered analyses in the text, or, if there were changes in the analysis plan following preregistration, those changes must be disclosed with explanation for the changes clearly distinguish in text analyses that were preregistered from those that were not, such as having separate sections in the results for confirmatory and exploratory analyses (these changes are added as a separate document linked to the text of the main paper)

## 4. Preparing your manuscript for submission

Please ensure that your manuscript is suitable for publication and completely free of errors before you submit. Please pay particular attention to SAGE guidelines on Authorship and the SAGE Correction Policy.

### 4.1 Formatting

The preferred format for your manuscript is Word. LaTeX files are also accepted. Word and (La)Tex templates are available on the Manuscript Submission Guidelines page of our Author Gateway.

### 4.2 Language and terminology

Authors must follow the Guidelines to Reduce Bias in Language of the Publication Manual of the American Psychological Association (6th ed). These guidelines relate to level of specificity, labels, participation, gender,

sexual orientation, racial and ethnic identity, disabilities and age. Authors should also be sensitive to issues of social class, religion and culture.

The language used in your manuscript should be inclusive and language that might be deemed sexist or racist should not be used. All submissions should avoid the use of pejorative terms and insensitive or demeaning language and submissions that use unacceptable language will be returned by the editor.

Useful websites to refer to for guidance

We recommend that authors consider looking at the below guidance:

- APA guidelines on Bias Free Language
- Words Matter
- Authors are encouraged to refer to land use any language guidelines that relate specifically to their research

**4.3 Artwork, figures and other graphics**

For guidance on the preparation of illustrations, pictures and graphs in electronic format, please visit SAGE's *Manuscript Submission Guidelines*

Figures supplied in colour will appear in colour online regardless of whether or not these illustrations are reproduced in colour in the printed version. For specifically requested colour reproduction in print, you will receive information regarding the costs from SAGE after receipt of your accepted article.

**4.4 Supplemental material**

This journal is able to host additional materials online (e.g. datasets, podcasts, videos, images etc) alongside the full-text of the article. For more information please refer to our guidelines on submitting supplementary files

**4.5 Reference style**

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If you use *EndNote* to manage references, you can download the SAGE Harvard EndNote output file.

**4.6 English language editing services**

Authors seeking assistance with English language editing, translation, or figure and manuscript formatting to fit the journal's specifications should consider using SAGE Language Services. Visit SAGE Language Services on our Journal Author Gateway for further information.

**5. Submitting your manuscript**

*Journal of Health Psychology* is hosted on SAGE Track, a web based online submission and peer review system powered by ScholarOne™ Manuscripts. Visit http://mc.manuscriptcentral.com/jhealthpsychology to login and submit your article online.

IMPORTANT: Please check whether you already have an account in the system before trying to create a new one. If you have reviewed or authored for the journal in the past year it is likely that you will have had an account created.  For further guidance on submitting your manuscript online please visit ScholarOne Online Help.

**5.1 ORCID**

As part of our commitment to ensuring an ethical, transparent and fair peer review process SAGE is a supporting member of ORCID, the Open Researcher and Contributor ID. ORCID provides a unique and persistent digital identifier that distinguishes researchers from every other researcher, even those who share the same name, and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between researchers and their professional activities, ensuring that their work is recognized.

The collection of ORCID iDs from corresponding authors is now part of the submission process of this journal. If you already have an ORCID iD you will be asked to associate that to your submission during the online submission process. We also strongly encourage all co-authors to link their ORCID ID to their accounts in our online peer review platforms. It takes seconds to do: click the link when prompted, sign into your ORCID account and our systems are automatically updated. Your ORCID iD will become part of your accepted publication's metadata, making your work attributable to you and only you. Your ORCID iD is published with your article so that fellow researchers reading your work can link to your ORCID profile and from there link to your other publications.

If you do not already have an ORCID iD please follow this link to create one or visit our ORCID homepage to learn more.

**5.2 Information required for completing your submission**

You will be asked to provide contact details and academic affiliations for all co-authors via the submission system and identify who is to be the corresponding author. These details must match what appears on your manuscript. The affiliation listed in the manuscript should be the institution where the research was conducted. If an author has moved to a new institution since completing the research, the new affiliation can be included in a manuscript note at the end of the paper. At this stage please ensure you have included all the required statements and declarations and uploaded any additional supplementary files (including reporting guidelines where relevant).

**5.3 Permissions**

Please also ensure that you have obtained any necessary permission from copyright holders for reproducing any illustrations, tables, figures or lengthy quotations previously published elsewhere. For further information including guidance on fair dealing for criticism and review, please see the Copyright and Permissions page on the SAGE Author Gateway

**Appendix B: Prospero Registration**

## Citation

Gemma Smith, Jenny Moses. Relational processes associated with post traumatic growth in spinal cord injury: a meta-synthesis of qualitative studies. PROSPERO 2021 CRD42021253502 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021253502

## Review question

What are the relational processes that enable or undermine post traumatic growth (PTG) in terms of adjustment to spinal cord injury?

## Searches

Electronic databases: PsycINFO, MEDLINE, Scopus, Citation Index of Nursing & Allied Health Literature (CINAHL) and Web of Science.

Search terms: databases to be searched using synonyms of post traumatic growth, spinal cord injury.

No time limit will be applied.

## Types of study to be included

Studies utilising a qualitative methodology with a recognised qualitative analysis method.

Studies will be included if:

a) They are peer-reviewed journal articles reporting on an empirical study;

b) Have a qualitative methodology;

c) Are published in English or have an English language copy available;

d) Participants are individuals who experienced a spinal cord injury in adulthood;

e) Investigates post traumatic growth and how this is experienced and/or develops.

Studies will be excluded if:

a) Participants were included in the study less than 1 year post injury;

b) Participants experienced a spinal cord injury in childhood;

c) They have a quantitative methodology;

d) They do not use a recognised qualitative analysis methodology;

e) They do not provide knowledge about social processes related to the development of PTG.

## Condition or domain being studied

The review will be looking at the experience of post traumatic growth following spinal cord injury.

Post traumatic growth is defined as positive psychological change resulting from the struggle with life circumstances or trauma (Tedeschi & Calhoun, 2004). Five potential areas for growth have been identified including appreciation of life, sense of priorities, relationships, sense of personal strength, recognition of new possibilities and spiritual development (Tedeschi and Calhoun, 2004). Research suggests it is possible for

individuals to experience growth in many of these areas following SCI (Chung and Lee, 2008; Kennedy et al, 2013).

## Participants/population

Inclusion criteria:

Individuals who have experienced a spinal cord injury in adulthood.

Exclusion criteria:

Spinal cord injury occurred in childhood;

Participants are less than one year post injury.

## Intervention(s), exposure(s)

Post traumatic growth following spinal cord injury that have a qualitative methodology and use a recognised qualitative analysis.

Inclusion criteria:

Peer-reviewed journal articles reporting on empirical studies with a qualitative methodology.

Exclusion criteria:

Studies with a quantitative methodology;

Studies that do not use a recognised qualitative methodology;

Studies do not provide knowledge about social processes related to the development of PTG.

## Comparator(s)/control

Not applicable.

## Context

Spinal cord injury is a life changing injury, resulting in significant physical, social and psychological challenges, and requiring considerable adaptation and adjustment (WHO, 2013). Research shows the potential for individuals to experience both negative and positive changes (Pollard & Kennedy 2007). In fact, some individuals report experiencing psychological growth (Pollard & Kennedy, 2007); described in the literature as post traumatic growth (PTG).

Tedeschi and Calhoun (2004) provide a framework for the development of PTG. Trauma is thought to alter an individuals schemas about the world, self and others. PTG is thought to occur through a process of rebuilding schemas.

Furthermore, studies have demonstrated the importance of relationships in enabling PTG in SCI (Khanjani et al, 2017; Wang et al, 2017). However, the mechanisms through which relationships might facilitate PTG are not currently well established. Bringing together research in this area would help to understand the way in which relationships might support or hinder PTG.

## Main outcome(s)

To identify relational processes that enable or undermine post traumatic growth following spinal cord injury.

## Additional outcome(s)

None.

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## Data extraction (selection and coding)  [1 change]

Databases will be searched using keywords. Titles and abstracts will be reviewed according to the inclusion and exclusion criteria:

Studies will be included if:

a) They are peer-reviewed journal articles reporting on an empirical study;

b) Have a qualitative methodology;

c) Are published in English or have an English language copy available;

d) Participants are individuals who experienced a spinal cord injury in adulthood;

e) Investigates post traumatic growth and how this is experienced and/or develops.

Studies will be excluded if:

a) Participants were included in the study less than 1 year post injury;

b) Participants experienced a spinal cord injury in childhood;

c) They have a quantitative methodology;

d) They do not use a recognised qualitative analysis methodology;

e) They do not provide knowledge about social processes related to the development of PTG.

The full texts of studies that are potentially eligible will be reviewed to ensure they meet the criteria. A selection of studies deemed to meet the criteria and those excluded by the researcher will be reviewed by a second reviewer who will assess whether these studies meet the criteria. Disagreements will be resolved through discussion.

Following this the studies will be assessed for quality using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist by the researcher and second reviewer to ensure accuracy.

Data Extraction - in line with Noblit and Hare's (1988) approach the following data will be extracted: Authors, Year of publication, County or Publication, Study Setting, Study Population (age, gender, injury type), Study Design, Data Collection Methods, Data Analysis Methods, Research Aims, Main Findings (main themes), Authors Interpretation of Themes, Study Quality (CASP score). Data will be extracted and populated into a pre-prepared spreadsheet. This will be completed by the main researcher. An audit will be completed to ensure data is accurately extracted.

## Risk of bias (quality) assessment
The quality of studies will be appraised using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist.

## Strategy for data synthesis  [1 change]

A preliminary search has indicated 8 studies that might be included in the study. We aim to pick up more studies by conducting a systematic search using the strategy outlined. The number of studies will be reviewed following and consideration given to modifying or expanding the search by the research team; in line with Noblit and Hare's (1988) approach.
A meta-ethnography approach will be taken, following Noblit and Hare's (1998) recommended approach, to analysis the data. The below stages will be followed:

1) Getting started

2) Deciding what is relevant to the initial interest - locating relevant studies using search strategy, making decisions on inclusion and quality assessment

3) Reading the studies - the main researcher will become familiar with the data by carefully reading the studies and making sense of the main findings, data will be extracted into the spreadsheet,

4) Determining how the studies are related - the main researcher will create of list of themes and determine how they relate or differ. Initial assumptions about the data will be noted.

5) Translating the studies into one another - the metaphors and concepts in each account and their interactions will be compared with the metaphors and concepts and their interactions in other accounts

6) Synthesising translations - translations will be compared with one another to determine if the type of translations are able to encompass those of other accounts. If so, a second level of synthesis, analysis competing interpretation and translating them into each other, will be completed to produce new interpretations. Themes and concepts will be reviewed with the research team.

7) Expressing the synthesis - the proposed synthesis will be communicated in an appropriate medium.

The researcher will make use of relevant software, e.g. microsoft excel to organise data and keep an audit trial.

## Analysis of subgroups or subsets
None planned.

## Contact details for further information
Gemma Smith
smithg32@cardiff.ac.uk

## Organisational affiliation of the review
Cardiff University

## Review team members and their organisational affiliations
Mrs Gemma Smith. Cardiff University
Dr Jenny Moses. Cardiff University

## Type and method of review
Epidemiologic, Synthesis of qualitative studies, Systematic review

## Anticipated or actual start date
21 June 2021

## Anticipated completion date
31 October 2022

## Funding sources/sponsors
Cardiff University

## Conflicts of interest

## Language
English

## Country
Wales

## Stage of review
Review Ongoing

## Subject index terms status

100

Subject indexing assigned by CRD

Subject index terms
Adult; Humans; Posttraumatic Growth, Psychological; Qualitative Research; Spinal Cord Injuries

Date of registration in PROSPERO
26 July 2021

Date of first submission
11 June 2021

Stage of review at time of this submission

| Stage | Started | Completed |
|---|---|---|
| Preliminary searches | Yes | No |
| Piloting of the study selection process | No | No |
| Formal screening of search results against eligibility criteria | No | No |
| Data extraction | No | No |
| Risk of bias (quality) assessment | No | No |
| Data analysis | No | No |

*The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.*

*The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.*

Versions
26 July 2021

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**Appendix C: Examples of Search Terms**

**Ovid MEDLINE(R) ALL <1946 to August 10, 2021>**

1        posttraumatic growth/   295
2        post traumatic growth.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    560
3        posttraumatic growth.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    1333
4        personal growth.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    1685
5        personal gain*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]        206
6        meaning making.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    1085
7        self growth.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]        132
8        benefit finding.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]        346
9        gratitude.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]        1788
10       positive change.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    2731
11       positive psychological change.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    43
12       positive outcome*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    11102
13       positive experience*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    4499
14       spinal cord injuries/   39724
15       hemiplegia/ or paraplegia/ or quadriplegia/        30842

16    spinal cord injur*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    53172

17    paraplegi*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    22623

18    quadriplegi*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    10524

19    hemiplegi*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    18080

20    tetraplegi*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    4562

21    spinal trauma.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    1165

22    spinal injur*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    13757

23    (spinal cord adj3 injur*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    54591

24    post traumatic depreciation.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    4

25    posttraumatic depreciation.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]    11

26    1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 24 or 25    24601

27    14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23    105161

28    26 and 27    158

**Web of science**  TS=( "post traumatic growth" OR "posttraumatic growth" OR "personal growth" OR "personal gain*" OR "meaning making" OR "self growth" OR "benefit finding" OR gratitude OR "positive change" OR "positive psychological change" OR "positive outcome*" OR "positive experience*" OR "posttraumatic depreciation" OR "post traumatic depreciation") AND TS=("spinal cord injur*" OR paraplegi* OR hemiplegi* OR quadriplegi* OR tetriplegi* OR "spinal trauma*" OR "spinal injur*" OR spinal NEAR/3 injur* )

**CINAHL -**

( "post traumatic growth" OR "posttraumatic growth" OR "personal growth" OR "personal gain*" OR "meaning making" OR "self growth" OR "benefit finding" OR gratitude OR "positive change" OR "positive psychological change" OR "positive outcome*" OR "positive experience*" OR "post traumatic depreciation" OR "posttraumatic depreciation" ) AND ("spinal cord injur*" OR paraplegi* OR hemiplegi* OR quadriplegi* OR tetriplegi* OR "spinal trauma*" OR "spinal injur*" OR spinal N3 injur* )

**SCOPUS** ( TITLE-ABS-KEY ( "post traumatic growth" OR "posttraumatic growth" OR "personal growth" OR "personal gain*" OR "meaning making" OR "self growth" OR "benefit finding" OR gratitude OR "positive change" OR "positive psychological change" OR "positive outcome*" OR "positive experience*" OR "post traumatic depreciation" OR "posttraumatic depreciation" ) AND TITLE-ABS-KEY ( "spinal cord injur*" OR paraplegi* OR hemiplegi* OR quadriplegi* OR tetriplegi* OR "spinal trauma*" OR "spinal injur*" OR spinal W/3 injur* ) )

**Appendix D: Example of inclusion decisions based on selection of 10 studies**

| Reference | English Language Copy | SCI | Methodology | PTG | Social | Adult onset | 1 year post injury | Inclusion decision | Reason |
|---|---|---|---|---|---|---|---|---|---|
| Angel, S., Spinal-Cord-Injured Individual's Experiences of Having a Partner: A Phenomenological-Hermeneutic Study. Journal of Neuroscience Nursing, 2015. 47(3): p. E2-8; quiz E1. | Y | Y | Qualitative | N | Y | | | Exclude | Does not provide knowledge relevant to PTG – studies couple relationship following SCI |
| Bailey, K., et al., "It's all about acceptance": A qualitative study exploring a model of positive body image for people with spinal cord injury. Body Image, 2015. 15: p. 24-34. | Y | Y | Qualitative | N | Y | | | Exclude | Does not provide knowledge relevant to PTG – studies body image and acceptance |
| Baker, F.A., et al., Meaning making process and recovery journeys explored through songwriting in early neurorehabilitation: Exploring the perspectives of participants of their self-composed songs through the interpretative phenomenological analysis. Frontiers in Psychology Vol 9 2018, ArtID 1422, 2018. 9. | Y | ABI & SCI | Qualitative | N | | | | Exclude | Does not provide knowledge relevant to PTG – studies specific music therapy intervention |
| Bender, A.A., Patients, partners, and practitioners: Interactions and meaning-making following Spinal Cord Injury. 2011, Georgia State University. p. 149 p-149 p. | Y | Y | Qualitative | ? | Y | Y | N | Exclude | Main reason: Dissertation May provide knowledge of cognitive processes but possibly not in context of PTG |
| Chemtob, K., et al., Exploring the peer mentorship experiences of adults with spinal cord injury. Rehabilitation Psychology, 2018. 63(4): p. 542-552. | Y | Y | Qualitative | N | | | | Exclude | Does not provide knowledge relevant to PTG – studies peer mentorship |

| Reference | | | | | | | | | Decision | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| Chun, S. and Y. Lee, "I am just thankful": the experience of gratitude following traumatic spinal cord injury. Disability & Rehabilitation, 2013. 35(1): p. 11-9. | Y | Y | Qualitative | Y | Y | ? some under 18 | Y | | Query with research team | Include based on discussions with research team, meets inclusion criteria, includes 2 participants under 18 but predominately over 18 |
| Clifton, S., G. Llewellyn, and T. Shakespeare, Faith, spirituality, and living the good life with quadriplegia. Psychology of Religion and Spirituality, 2020. 12(3): p. 356-365. | Y | Y | Qualitative data but no use of recognised method | ? | N | | | | Exclude | Not structured data analysis - presentation of stories |
| Cook, D.W., Dimensions and correlates of postservice adjustment to spinal cord injury: A longitudinal injury. International Journal of Rehabilitation Research, 1982. 5(3): p. 373-375. | Y | Y | Quantitative | | | | | | Exclude | Methodology quantitative not qualitative |
| Crawford, J.J., A.M. Gayman, and J. Tracey, An examination of post-traumatic growth in Canadian and American ParaSport athletes with acquired spinal cord injury. Psychology of Sport and Exercise, 2014. 15(4): p. 399-406. | Y | Y | Qualitative | Y | Y | ? – only means provided | ? – only means provided | | Query with team | Include based on discussions with research team. Not possible to understand age of injury or time since injury. Reintegration to sports suggests not in early stages of recovery and consideration of longer term adjustment |
| Crewe, N.M., Gains and losses due to spinal cord injury: views across 20 years. Topics in Spinal Cord Injury Rehabilitation, 1996. 2(2): p. 46-57. | Y | Y | Quantitative | | | | | | Exclude | Methodology quantitative not qualitative |

**Appendix E: CASP Scoring**

| Study | Clear aims stated | Qualitative methodology appropriate | Research design appropriate | Recruitment strategy appropriate | Data collection appropriate | Relationship & reflexity | Ethics | Rigorous data analysis | Findings clearly stated | Value of research | Overall score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chun & Lee 2008 | Y - aim of the research clearly stated: to explore the characteristics of PTG for people with SCI (2/2) | Y - qualitative methodology utilise to gain in-depth understanding of question (2/2) | Cant tell - states thematic analysis used based on GT methodology - gives rationale for use of thematic analysis but no clear rationale given for choosing to use thematic analysis over GT analysis (1/2) | Y - clearly states recruitment strategy including inclusion criteria used for study and gives rationale for this. (2/2) | Y - in-depth interviews conducted and audio recorded. Discussed use of grand and mini tour questions to guide interview. Use of field notes to capture initial ideas. Evidence of theoretical sampling. (2/2) | Cant tell - some acknowledgement of researchers reflexivity - e.g. through writing field notes but not clear whether this included reflection on own assumptions and biases. Discussion of member-checking from participants for coding drafts. (1/2) | N - no discussion of ethical considerations nor whether the study was reviewed and approved by a regulatory committee. (0/2) | Y - clear statement of analysis procedure and steps taken to enhance trustiwothiness. Themes outlined with quotes or descriptions to demonstrate findings. (2/2) | Y - clear statement of findings that addresses the research question. Evidence of steps taken to enhance credibility e.g. second reviewer for analysis and member checking. (2/2) | Y - findings considered in relation to research base. Clinical implications and areas for future research considered. (2/2) | 16 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chun & Lee 2010 | Y - aims of research clearly stated - to explore the role of leisure in the experience of posttraumatic growth (PTG) for people with spinal cord injury (SCI) (2/2) | Y - qualitative methodology described as appropriate to better understand the insiders' voices on the role of leisure in the experience of growth. (2/2) | Cant tell - states thematic analysis used based on GT methodology with no rationale. Appears to a secondary analysis of Chun and Lee (2008) - not transparent about this and no rationale given. (1/2) | Y - clearly stated recruitment strategy, including inclusion criteria and selection (2/2) | Cant tell - appropriate method for research question, however this study appears to be secondary analysis of data collected from Chun and Lee (2008) - lack of transparancy and justification of this in article (1/2) | Cant tell - describes use of field notes but unclear on purpose. Describes member checking processes. No evidence of critical reflection on own stance and beliefs and impact on data analysis. (1/2) | N - no discussion of ethical considerations nor whether the study was reviewed and approved by a regulatory committee. (0/2) | Y - clear statement of data analysis given and steps taken, use of reviewer for coding, member checking. Clear statement of findings with quotes to demonstrate themes. (2/2). | Y - statement of steps to ensure trustiworthiness given - use of review for coding, expert debriefing, member checking. Findings relevant to research question. (2/2) | Y - findings stated in relation to previous research, areas for further research and clinical implications. (2/2) | 15 |
| Chun & Lee 2013 | Y - the purpose of the study is stated as exploring the experience of gratitude followong SCI. (2/2) | Y - rationale given as understanding lived experience, and methodology is appropriate to explore research question. (2/2) | Y - explanation given for use of GT methodology and transparant about study being part of a larger qualitative study. (2/2) | Cant tell - recruitment strategy given, including inclusion criteria and rationale, unclear how 15 from 20 participants were selected. (1/2) | Y - interviews utilised and audio recorded - appropriate for aims. Transparent about study being part of wider study. (2/2) | Y- section of reflexivity and how researchers monitored own influences during data collection and analysis (2/2). | Y - ethical approval gained from hospital and university research ethics board (2/2) | Y - clear statement of how data analysis was completed, stated of reflexivity, number of ways rigour was increased. (2/2) | Y - clear statement of findings, relevant to the research question. (2/2) | Y - findings stated in relation to previous research, areas for further research and clinical implications. (2/2) | 19 |

| Crawford, Gayman & Tracey 2014 | Y - States two specific research questions: (1) Does participation in ParaSport following acquired SCI influence people's perceptions of PTG? (2) What specific dimensions of PTG, if any, do ParaSport athletes report experiencing? (2/2) | Y - rationale given for qualitative methodology and this is appropriate for research aims. (2/2) | Y - clear rationale given for use of phenomenological approach. (2/2) | Y - recruitment strategy provided, including use of inclusion criteria for study. (2/2) | Y - data collected through interview and survey methods and clear rationale given for use of interviews. Use of interview guide and statement of how this was develoepd based on relevant literature. Interviews audio recorded. Theoretical saturation discussed. (2/2) | N - the relationship between the participants and researcher not considered. No mentioned of relexivity. (0/2) | Y - ethical approval gained from research ethics board (2/2) | Cant tell - clear statement of data analysis given and steps taken, including use of multiple researchers to code and search for themes - not consistent with IPA approach. Clear statement of findings given with quotes to demonstate themes. (1/2) | Y - states the use of field notes, member checks, data and investigator triangulation also contributed to the trustworthiness of the researchers' interpretation of the data. Findings address research question and findings discussion in relation to original questions (2/2) | Y - States - The use of field notes, member checks, data and investigator triangulation also contributed to the trustworthiness of the researchers' interpretation of the data (2/2) | 17 |

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| Griffiths & Kennedy 2012 | Y - research aims were: how do individuals describe their positive outcomes? And, what processes do people go through in order to achieve these positive outcomes? (2/2) | Y - Clear rationale for qualitative methodology - problems with quantatitve measures and qualitiative to gain in-depth understanding. (2/2) | Y - clear rationale given for use of IPA. (2/2) | Y - Explanation of how participants were recruited - from an existing research pool. Selected based on PTG and wellbeing scores and rationale given for this. Response rates included. (2/2) | Y - data collected through semi-structured interviews, audio recorded. Rationale given for data collection methods (2/2) | N - the relationship between the participants and researcher not considered. No mentioned of relexivity. (0/2) | Cant tell - discussion of some principles e.g. informed consent and debriefing, but no discussion of ethical approval by regulatory body/committee (1/2) | Y - steps of IPA data analysis clearly stated with consideration of credibility/second reviewer. Findings presented with quotes and in-depth exploration. (2/2) | Y - statement of findings relevant to research question with in-depth exploration. Credibility of findings discussed - discussion with supervisor, research supervision, independent research and peer supervision, triangulation of findings and discussion of themes until agreement reached. (2/2) | Y - findings considered in relation to existing theory, theoretical and clinical implications outlined, limitations stated. (2/2) | 17 |
| Kennedy, Lude, Elfstrom & Cox 2013 | Y - aims of study clearly stated: to explore the ways in which people perceive that they have benefitted | Y - rationale for using qualitative methodology stated as to allow deeper investigation of subjective experience. (2/2) | Cant tell - study states that a longitudinal multiwave panel design was used but no rationale given for approach taken. (1/2) | Y - states setting participants were recruited from, exclusion criteria and reasons participants chose not to | Cant tell - data collection process unclear and no rationale provided. (1/2) | N - the relationship between the participants and researcher not considered. No mentioned of reflexivity. (0/2) | Y - ethical approval obtained from each centers local research ethics committee (2/2) | Cant tell - data analysis discussed but not enough information provided to understand some decisions made (e.g. use of score assignment). | Y - statement of findings relevant to research question but very little depth given for themes. Discusses using at least 2 coders to code each | Y - findings considered in relation to exisiting theory and literature. Limitations and clinical implications considered. Further research | 14 |

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| | positively from the experience of SCI. (2/2) | | | take part. (2/2) | | | | | Findings presented with quotes, though more depth could be provided. (1/2) | response. (1/2) | needs stated. (2/2) |
| Khanjani, Younesi, Khankeh & Azkhosh 2017 | Y - aims of the study stated: to explore the factors that can facilitate post-traumatic growth in these patients (2/2) | Y - rationale for qualitative methodology clearly stated (to provide deep insights into experiences perceptions) and justification given as to why this was more appropriate than quantitative. (2/2) | Y - rationale given for choice of content analysis (2/2) | Cant tell - sampling method given including criteria for inclusion in study, but no information given about how participants were recruited into the study (1/2) | Y - use of semi-structured interviews, audio-recordings of interviews. Data saturation approach and moifying interview questions based on previous data (2/2) | Cant tell - discussed multiple measures for checking data (peer, member and expert checks). No mention of researcher reflexivity. (1/2) | Y - ethical approved given by university ethics committee. Clear statement of ethical considerations for the study included. (2/2) | Y - steps of data anlysis clearly stated, including data saturation. Consideration of how validity and reliabiliy was achieved in separate section. Results clearly presented with quotes to demonstrate. (2/2) | Cant tell - findings relevant to research question. Subcategories stated but sections not included in write up of findings. Section of reliability and validity - use of peer, member and expert checks. (1/2) | Y - findings considered in relation to exisiting theory, clinical practice and limitations (2/2) | 17 |

| Study | Aims | Methodology | Research design | Recruitment | Data collection | Reflexivity | Ethical issues | Data analysis | Findings | Value | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Littooij, Widdershoven, Stolwijk-Swüste, Doodeman, Leget & Dekker 2016 | Y - the purpose of this study clearly stated: (i) to explore the content of global meaning of people with SCI, and (ii) to explore whether or not global meaning changes after SCI. (2/2) | Y - qualitative methodology utilised as little known abut research topic and methodology is appropriate to address aims (2/2) | Cant tell - no rationale given for research design chosen (1/2) | Y - Recruitment strategy discussed. Exclusion and inclusion criteria mentioned with some rationale given. (2/2) | Y - semi-structured interveiws based on topic list of questions conducted and recorded. Questions reviewed and revised as data collection progressed - rationale given for approach. Discussed how saturation was reached. (2/2) | N - the relationship between the participants and researcher not considered. No mentioned of relexivity. (0/2) | Y - study approved by hospital ethics committee. Discussion regarding how consent was gained. (2/2) | Y - GT used for analysis, steps of data analysis clearly stated including how study reached data saturation. Quotes provided to demonstrate themes with differences outlined. (2/2) | Y - findings clearly stated with quotes from multiple respondents to demonstrate findings. The analysis was conducted by two researchers. Findings relevant to original research question. (2/2) | Y - findings considered in relation to research base and areas for future research considered. (2/2) | 17 |
| Wang, Wang, Wang, Xie, Shi & Zhao 2017 | Y - aims clearly stated: to explore the process of posttraumatic growth for individuals who have sustained a traumatic spinal cord injury (2/2) | Y - the methodology is appropriate to address the research aims. (2/2) | Cant tell - no rationale given form research design chosen (1/2) | Y - recruitment strategy discussed and inclusion criteria clearly stated. (2/2) | Cant tell - semi-structured interviews based on a interview schedule conducted and audio recorded. No rationale for approach was given. (1/2) | Cant tell - mention of strategy to reduce bias - returning texts to selection of participants to evaluate whether analysis was in line with real-life experiences. No other acknowledge | Y - study approval by university ethics committee. Discussion of maintaining confidentility y, informed consent and debriefing procedures. (2/2) | Y - IPA used to analysis data, steps for analysis clearly stated. Quotes used to support themes, often from multiple participants. (2/2) | Y - clear statement of findings relevant to research question. Discussion of ways to increased credibility e.g. multiple analysts, member-checking and checking final themes | Y - findings considered in relation to research base. Clinical implications and areas for future research considered. (2/2) | 17 |

ment of own
assumptions
or biases nor
strategies to
reduce this
(1/2)

against
transcripts.
(2/2)

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**Appendix F: Meta-ethnography – example of data extraction for Chun and Lee (2008)**

**Study title: The Experience of Posttraumatic Growth for People With Spinal Cord Injury**

**Authors: Chun & Lee (2008)**

Objective: The purpose of this qualitative study was to explore the characteristics of PTG for people with SCI.

Themes:

1. The experience of meaningful family relationships –  3 subthemes of - a) Experience of emotional Intimacy, b) Experience of gained trust and c) Experience of mutuality in relationships
2. The experience of meaningful engagement – 3 subthemes – a) Recognition of personal strengths, b) experience of strengthened social relationships through activities, and c) experience of positive emotions
3. An appreciation of life – 3 subthemes – a)  Appreciation for everyday life, b) Appreciate through social comparison, c) Appreciation through comparing self

| Themes (key concepts) | Participants quotes (first order constructs) | Primary author interpretations (second order constructs |
|---|---|---|
| The experience of meaningful family relationships<br><br>a.   Experience of emotional Intimacy | "My dad never once told me he loved me until I broke my neck. We never showed any affection. He came from Germany, and he was just a toughened person." – William | Although most participants experienced disrupted friendships, they became closer to their families following the traumatic accidents. Emotionally intimate relationships appear to be a critical PTG experience because they not only allow the participants to experience a sense of belonging and attachment but give them a reason to live well. |
| b.   Experience of gained trust | People meant very well, but they were saying, "Oh, you're such an inspiration. We know you can handle this." It was just like . . . "Wow, you're such a great person. Why [did] this happen to you?" I wasn't ready to hear the whole parade, the cheerleader for marching. I was just, "Okay . . ." I think, though, you need people to support you. . . . The important people are your family, and though it's wonderful to hear that everybody is praying for you—and that's a | As a result of needing to receive significant family support, participants realised the value of their families and built trust in them. |

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| | great thing and I know that really helped—but that's off for a week or two out. – Mary | |
| c. Experience of mutuality in relationships | I used to do everything for myself, [then] I couldn't do anything. It affected my life even when it came to my kids because my mum went and got guardianship of them. That's been really hard, and I'm still in court fighting for my kids - Jane | In contrast, instead of building trust, the participants of the negative cases experienced mistrust and anger toward some of their family members |
| | It has been nice to have somebody to talk with about personal issues. If I need to unload my issues with somebody, I unload it on my youngest daughter, and sometimes I complained about my husband because he did not understand something. – Mary | Participants and their family members became more closely connected to one another because they experienced a sense of commonality and shared understanding following the accidents |
| | I think I'm closer to my family now than I've ever been because they help me with things that I need and I actually help them." Ellie | Ellie learnt to receive help from family as well as give it. Experienced job and confidence in newfound mutuality of relationships. It seems that the experience of mutuality in relationships is an important element of meaningful relationships. |
| Experience of Meaningful Engagement<br>a) Recognition of personal strengths | I'd always colored when I was a kid and drew and stuff like that.... [But after the injury] I started getting into art more, taking my art more seriously.... I started getting into sculpture, and that's far more important than what I was doing. And I won the best of show two years in a row in high school – Jenny | Whereas the participants of the negative cases occupied their time solely by taking care of activities for daily living, participants spent time engaging in social activities and reported an understanding of personal unique abilities and a sense of success and achievement that led to personal recognition through meaningful engagement in activities. |
| | I've gone to the Keys by myself and had a wonderful time. I didn't need to have other people to have a good time. I could just take my tricycle out, and I was riding on those old bridges. . . . I fished. I was on vacation, but I was with myself. . . . I could have fun. I could entertain myself. - William | In addition, all the participants, except for those of the two negative cases, reported experiencing a sense of success and achievement from various activities in their lives. . Acquiring a driver's license was a common way to experience a sense of success and to connect to the social world.<br><br>Negative cases mentioned their social networks had been limited following injuries. |

| b. Strengthened social relationships through activities | "I really don't associate with people in Alabama anymore. I tried keeping in contact with a few of them, but I've been in and out of rehabs and stuff like that. So it's hard." – Jason | |
|---|---|---|
| | | Involvement in free-time activities, including SCI support groups, helped to rebuild/expand social networks. |
| | I went to DC for the first time, and that was just an amazing experience to be with over 200 other people in wheelchairs. I met some of the people that I've met on the Web site and made new friends. . . . I realized how big the SCI community is, which is overwhelming. – John | |
| | "I'm meeting and remeeting people who have similar injuries. . . . I've met a lot of good people with whom I could share my thoughts and feelings - Mary | Developing friendships through engagement in activities is another vital theme of strengthened social relationships. While being involved in various activities offered by local rehabilitation centers, most participants in this study had natural opportunities to rejoin and interact with their peers who had interests in similar activities and who understood living with permanent illness. Through enjoyable interactions with their peers, the participants built friendships – which could foster a sense of belonging and acceptance. |
| c. Experience of positive emotions | I went over to Japan for one month, and every day was like a new discovery. . . . It just opened up a whole different world to me and that was just so exciting. . . . I really enjoyed it." – Jenny<br><br>"I went to my first water-skiing clinic in 2001, and it was a thrill to be able to get back on the water and ski again." – Dan | All the participants of the positive cases reported that they likewise experienced emotions through meaningful engagement in activities. Excitement was one of the most commonly reported positive emotions – usually in reference to new or adventurous activities. |
| Appreciation of life<br>a. Appreciation for everyday life | I have a greater appreciation for life because you realize that it can be taken away or, you know, it can vanish at any point.... Until you come that close to dying you don't realize what a gift, I mean, just like, not even every day but every breath. Every heartbeat is just a bonus as far as I'm concerned. – Eric | A number of participants stated that they realized how wonderful their lives had been and that they became more thankful for everyday life. Specifically, they showed a great appreciation for beautiful flowers, colorful butterflies, children's laughter, and the sound of their own breathing. |

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| | "just so happy and thanked God" for letting him "wake up and watch birds," "watch and understand educational things on TV," and be "able to make correct decisions." Moreover, he continued to thank God for his wife, who "had given up her life pretty much" to take care of him - Whitney | After almost losing their lives, the participants learned what they had experienced had great benefit, and they became more thankful for their everyday lives. |
| b. Appreciate through social comparison | It's also awareness that "Oh, you don't have it so bad. You're only a para. Look at these quads. Aren't you glad you can do [something by yourself]?" At the tennis clinic, they have to strap the tennis racquet to their hand, wrap it up with tape so that they could move their arm a little bit, but wow, I can hold on to that thing. That's what just really gets you. . . . I feel a lot luckier. I'm very blessed in so many ways - Mary | Most participants identified reasons to appreciate their abilities by comparing themselves to people demonstrating higher function and enjoying more successful lives and to people dealing with more serious life issues. |
| c. Appreciation through comparing self | "looking at everything from other people's point of view." "If somebody is having a bad day, I understand that their problems and their issues are just as great as my problem. And I never take things for granted." - Ellie | Comparing their lives before and after the accident provided the participants an opportunity to appreciate their current lives. After experiencing a traumatic injury and standing in an unexpected social position, all the participants in this study had gained insights and a chance to see their lives from different perspectives. All the participants, except the two from the negative cases, reported that they were thankful for becoming better people, in terms of social relationships |

**Appendix G: Meta-ethnography Step 4 List of Themes**

**Chun & Lee (2008) -** experience of gratitude

1. The experience of meaningful family relationships
    a) Experience of emotional Intimacy
    b) Experience of gained trust
    c) Experience of mutuality in relationships
2. The experience of meaningful engagement
    a) Recognition of personal strengths
    b) Experience of strengthened social relationships through activities
    c) Experience of positive emotions
3. An appreciation of life
    a) Appreciation for everyday life
    b) Appreciate through social comparison
    c) Appreciation through comparing self

**Chun & Lee (2010) -** role of leisure in the experience of PTG

1. Providing opportunities to discover unique abilities and hidden potential
    a) Finding personal strengths and hidden potential
    b) Experiencing a feeling of success and achievement
    c) Gaining reputation/recognition.
2. Building companionship and meaningful relationships
    a) Companionship
    b) Meaningful relationships
3. Making sense of traumatic experience and finding meaning in everyday life
4. Generating positive emotions

**Griffiths et al (2012)** – describe growth and processes to achieve growth

1. Living a Normal Life, Just Doing Things Differently
        Subtheme 1: Getting back to normality
        Subtheme 2: I'm the same person as before
        Subtheme 3: Unchanged goals and values
        Subtheme 4: Normal ups and downs of life
        Subtheme 5: Different ways of doing things
2. Overcoming Challenges: Determination to Succeed
        Subtheme 1: Inner resources: personality and cognitive style
        Subtheme 2: The injury as a tool to be used positively
        Subtheme 3: Acceptance and change
        Subtheme 4: Maturation, growth, and change
3. Using the Resources Available to Me
        Subtheme 1: Support from others
        Subtheme 2: Meaningful activity
        Subtheme 3: New skills


**Chun & Lee 2013** – experience of gratitude
1. gratitude for everyday life
2. gratitude for family support

3. gratitude for new opportunities
4. gratitude for a positive sense of self
5. gratitude to God.

**Kennedy et al (2013)** – perceptions of gain
1. Relationships
2. Appreciation of relationships
3. Perspective and appreciation of life
4. New goals or priorities
5. Understanding of SCI or disability
6. Appreciation of health or health care
7. Changed personality
8. Opportunity or challenge
9. Knowledge of SCI or body
10. Newly acquired skills
11. Spirituality
12. Acceptance
13. Nothing.

**Crawford et al 2014** – experiences and perceptions of growth in athletes
1. Injury relevant processing
     a) forced new identity
     b) re-establishment of identity
2. Appreciation for life
     a) being in the present
     b) not taking things for granted
     c) clarity, and perspective.
3. Reactive behavior as a result of attempted integration into ParaSport
     a) Problem solving
     b) Confidence
     c) Less judgmental
4. Relating to others
     a) family and friends
     b) meeting people
     c) learning from people.
5. Health and well-being
     a) increased health, fitness
     b) independence

**Lijotti et al (2016)** – content of global meaning and changes following injury

1) core values
2) relationships
3) worldview
4) identity
5) inner posture

**Khanjani et al (2017)** – factors that facilitate growth
1) Existence of support resources
        a) Family support and continuity of this support
        b) Organizational support
        c) Friends help in passing the problems
2) Contact with spinal cord injury associations
        a) Using other people's experiences

b) Helping to change attitude toward injury

c) Recognizing their talents and capacities

d)  Receiving proper empathy

3) Spiritual beliefs

a) Accepting one's fate

b) Believing in God's help for achieving success

c) Believing that god will compensate for one's suffering compensation for endure hardships by God

d) Finding a meaning for the injury

4) Positive attitude toward injury

a) Believing that life continues after injury

b) Not considering limitations as barriers to activity and success

c) Hope to improve conditions

5) Access to proper facilities

a) Using proper rehabilitation aids

b) Living environment that promotes more independence

c) Financial resources to obtain the necessary facilities

6) Enhancement of knowledge and awareness

a) Knowing one's injury for a better adaptation to condition

b) Attention and recognition capabilities healthy parts of the body,

c) Understanding the consequences of the injury that help acceptance and change

7) Active presence in society

a) The role of social activity in health

b) Reduce the burden of caring for family

c) Gaining a sense of usefulness

**Wang et al (2017)** – process of adjustment and growth

1) Struggling in hopelessness

a) desire to end their life

b) emotions caused by loss of autonomy

c) lack of the rehabilitation information

d) isolation from society

2) Disentangling from disability

a) support of existence

 b) acceptance of the self in a wheelchair

c) reconstruction of a sense of belonging

d) active community reintegration

3)Facing challenge and achieving positive growth

 a) breakthrough and challenge of self

 b) enjoying achievements

c) Enhancement of wisdom

d) assistance for disabled peers

**Appendix H: Meta-ethnography step 5 example of translating the studies into each other for peer theme**

4. Peer Relationships

Findings from Chun and Lee (2008) suggest that involvement with SCI groups can help individuals with SCI to rebuild and expand their social networks. Participants were able to build friendships with those who understood living with permanent interest, which could foster a sense of belonging and acceptance. Similarly, findings from Chun and Lee (2010) highlight the role of meeting and developing friendships with peers in expanding social networks and fostering feelings of acceptance and belonging. The study adds that developing meaningful relationships with peers allow individuals with SCI to share life stories, issues and concerns with those who understand. Griffiths et al (2012) found peer support could be an important resource in the development of PTG through showing individuals that life can go on and encouraging their belief that they too can overcome difficulties. Chun and Lee (2013) also mentioned that peer support was seen as important in letting others know that there was life after SCI. This study also adds that helping others with SCI through sharing stories and advice was an important source of gratitude for individuals living with a SCI. In looking at areas of gain following SCI, Kennedy et al (2013) findings show that many individuals find they have a new perspective of other with a disability and an appreciation (or shared understanding) of what they have been through and what life is like for them. Another area of gain was opportunities to help others, similar to Chun and Lee's (2013) findings that opportunities to help others with SCI was an important source of gratitude following SCI. Similar to Chun and Lee (2008, 2010), Crawford et al (2014) findings shown that becoming involved in parasports allowed participants to make connections with others, with whom they could share their experiences, providing additional sources of support, including asking questions they may not have felt they could ask a health professional, problem solving and learning how to do certain activities. Similar to Chun and Lee (2013) and Kennedy et al (2013), Crawford et al (2014) findings showed following their injury individuals that SCI taught them that everyone has a unique story and to be more caring and to be less judgemental to others. As part of this individuals felt it was important to educate and protect individuals who had suffered similar experiences. Khanjani et al (2017) also showed the role of interactions with peers in facilitating PTG following SCI through helping them gain experience needed to deal with problems, changing their attitude towards their injury and becoming more aware of their capabilities. Patients with post-traumatic growth stated that they had received great sympathy from other patients with a spinal cord injury because they had common problems, emphasising the role of shared understanding in receiving peer support. Similarly to Chun and Lee's studies, Wang et al's (2017) findings demonstrate the importance of developing new friendships with individuals with SCI as individuals felt they understood their experiences more than their friendship groups prior to injury. These friendships helped them to re-construct their sense of belonging. Similar to other studies, individuals had a desire to give back to disabled peers, including through fundraising, reducing barriers to access and helping them see life can be good with SCI. In doing so they had accomplished a great deal in this field.

Summary of main ideas – peer relationships as fostering belonging and acceptance due to shared experiences and understanding, being able to provide informational and emotional support from a lived experience as valuable, peer interactions can change your understanding of own capabilities (should social comparison go here?) and give you knowledge that life can go on, shared understanding and empathy facilitates desire to give back – opportunities to give back seen as gain/growth opportunities.

| Descriptor | First order data (participant quotes) | Second order constructs |
|---|---|---|
| Peer Relationships | I went to DC for the first time, and that was just an amazing experience to be with over 200 other people in wheelchairs. I met some of the people that I've met on the Web site and made new friends. . . . I realized how big the SCI community is, which is overwhelming. – John | Strengthened social relationships through activities (Chun and Lee, 2008) |
| | "I'm meeting and remeeting people who have similar injuries. . . . I've met a lot of good people with whom I could share my thoughts and feelings – Mary | Strengthened social relationships through activities (Chun and Lee, 2008) |
| | "meeting and remeeting people who have similar injuries" – Mary | Companionship (Chun and Lee, 2010) |
| | "it was good to see other people who could talk about my personal issues such as a 'bowel program' because nobody else really understood and did not talk about those issues if he/ she was not in a chair." | Meaningful relationships (Chun and Lee, 2010). |
| | Ellie noted that she "always knew that there's someone out there that was worse" than she, she "wanted to try to help them," and she "really enjoyed helping people with SCI by letting them know that this isn't the end and that they have a life after acquiring SCI." | Making sense of traumatic experiences and finding meaning in everyday life (Chun and Lee, 2010) |
| | Meeting people who had been injured...it was a nice way to see that life goes on." (Chris, 9:346) | Support from others (Griffiths et al., 2012) |
| | "letting them know that there is life after SCI". | Gratitude for new opportunities (Chun and Lee, 2013) |
| | "I got to know new and nice people. I have a strong company and alliance that I didn't know before." | Relationships (Kennedy et al., 2013) |
| | Being involved in a community of other like-minded persons with spinal cord injuries provides a wealth of knowledge. For example, if I want to know what going to Spain in a wheelchair is like, I probably only have to ask because someone in the room has done it before me. The shared knowledge base is a huge, huge bonus and has helped massively with | Problem solving (Crawford et al., 2014) |

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| | my confidence as a wheelchair user. Additionally, I travel the world and experience all kinds of bizarre conundrums that I have to solve somehow e but I experience this with others and we can brainstorm. I feel there is little that cannot be dealt with in some creative way. (P2) | |
| | I feel I have probably become more opened because I am more open about myself. I used to be very quiet. No one knew what I thought or knew anything that was going on in my head. I feel like once I had my accident, I kind of had to change that one because I felt that responsibility of not letting the next person who was out there in a chair feel smaller because of someone else. (P7) | Less judgmental (Crawford et al., 2014) |
| | It [the injury] really has introduced me to a lot of people with disabilities. A lot are different people with different disabilities who are also interested in sport, which was great for me. I didn't know a lot of people with disabilities and I definitely didn't know a lot of people with disabilities who were interested in sport and being physically active. There was kind of that introduction to my peers that I otherwise would not have met. (P6) | Meeting people (Crawford et al., 2014) |
| | Being involved in sport, it kind of connected me to this community that I think was really important for me to be around. Not necessarily to get me to accept it but I learned so much from them. I just learned about life. Along with their peer support and with the strength that I gained it could have made me be more independent. if I ever have a problem I can call them up and say what did you do when this happened? You know connecting you to a community of similar abilities or experiences that was more positive. It was like a new family. (P2) | Learning from people (Crawford et al., 2014) |
| | after some years, I learned about an association for patients with spinal cord injury. I saw many problems there, but I felt I could continue, and this was a very good event in my life. There were some personal problems that every patient with a spinal cord injury experiences. With the help of the experiences of other patients in the association, I learned how to deal with my problems in a better way." | Contact with spinal cord injury associations (Khanjani et al., 2017) |
| | "in the spinal cord injury association, I discovered some of my capacities that I was not aware of before. It was after this that I started to continue my education." | |

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|---|---|
| "There are other people like me; it's not the end of the world. They can continue their lives, and it is up to them. It is all dependent on our mindset and beliefs. If we have correct beliefs, nothing is a limitation. These are barriers and limitations that we make for ourselves, and none of them can be an excuse for not being active." | Contact with spinal cord injury associations (Khanjani et al 2017) |
| Online I met other friends with disabilities, they took me to the group with SCI. Communication with them opened my mind and taught me how to live. We built companionship and friendship through shared experience. (Participant A) The sense of belonging in this group changed my mood. I could share my thoughts and feelings with them. My heart opened and I wasn't so melancholic. (Participant E) Everyday I visit the chat room online and spend time with disabled friends. They are like my family members. If I can't see them for three days I miss them. (Participant C) | Positive attitude towards injury (Khanjani et al., 2017) |
| I made a lot of friends and their aspirations changed my attitude to life. A paraplegic friend who runs a small cafe lets me see the wonderful life an individual with SCI can have. Later, I opened an online shop. Sometimes I also help friends do the design or budget. (Participant A) | Reconstruction of a sense of belonging (Wang et al., 2017) |
| You know, barrier—free facilities are limited in China, so I hope the government can build a special nursing home for people with SCI. I have the building design drawings in my head. (Participant C) | Reconstruction of a sense of belonging (Wang et al., 2017) |
| I am responsible for the sale of goods for charity, and charity income is used to help children from the mountains. My dream is broken so I want to help them realize their dreams. (Participant J) | Active community reintegration (Wang et al., 2017 |
| I'll try to publicize my positive energy. I have uploaded some videos, when other people with SCI see me they can learn from me. Many peers say I'm their idol and spiritual pillar. I want to tell people that life with a SCI can be so exciting. (Participant I) | Assistance for disabled peers (Wang et al., 2017) |
| It's also awareness that "Oh, you don't have it so bad. You're only a para. Look at these quads. Aren't you glad you can do [something by yourself]?" At the tennis clinic, they have to strap the tennis racquet to their hand, wrap it up with tape so that they could move their arm a little bit, but wow, I can hold on to that thing. That's what just really gets you. . . . I feel a lot luckier. I'm very blessed in so many ways – Mary | Appreciate through social comparison (Chun and Lee, 2008) |

| | | |
|---|---|---|
| | Ellie noted that she "always knew that there's someone out there that was worse" | Making sense of traumatic experiences and finding meaning in everyday life (Chun and Lee, 2010) |
| | To the left of me there was you know this guy who had just been married a day; who literally one day, day two of his marriage, went to work someone robbed the convenience store and instead of just taking the money and being fine they walked him out back and shot him at the very top of his spine. The way he communicated was blinking. So the guy next to me to the right was the 68 year old African American guy, such a great guy was simply on his roof trying to clean his gutters and he fell. Then the guy across from me was playing pool, got caught in a fight, and was shot 6 times in the chest and it was just then you think you know it can be so much worse. These people are so resilient. (P7) | Not taking things for granted (Crawford et al., 2013) |
| | comparing his life quality to the young man dealing with more serious life challenges …."He is going to try and have a room of his own… I don't think he drives but gosh, it is so hard… I feel a lot luckier. I know I'm very blessed in so many ways". | Gratitude for everyday life (Chun and Lee, 2013) |
| | "There are other people like me; it's not the end of the world. They can continue their lives, and it is up to them. It is all dependent on our mindset and beliefs. If we have correct beliefs, nothing is a limitation. These are barriers and limitations that we make for ourselves, and none of them can be an excuse for not being active." | Positive attitude towards injury (Khanjani et al., 2017). |

**Appendix J: Meta-ethnography Step 6 Reciprocal Translation**

*Connecting With a Peer Community*

*Belonging & Acceptance*
1. Chun and Lee (2008) suggest that involvement with SCI groups can help individuals with SCI to rebuild and expand their social networks. Participants were able to build friendships with those who understood living with permanent interest, which could foster a sense of belonging and acceptance.
2. Chun and Lee (2010) highlight the role of meeting and developing friendships with peers in expanding social networks and fostering feelings of acceptance and belonging.
3. Griffiths & Kennedy (2012) - does not endorse or provide information regarding this theme
4. Chun and Lee (2013) – does not endorse or provide information regarding this theme.
5. Quotes from Crawford et al (2014) show participants saw the peer community as a "family" and "community" that could be turned to if support was needed due to shared experiences – suggesting a sense of belonging within this group.
6. Quotes from Kennedy et al (2013) refer to peers as a company or alliance suggesting a level of feeling connected with peers due to shared experiences.
7. Lijotti et al. (2016) – does not endorse or provide knowledge of this theme.
8. Khanjani et al. (2017) - – does not endorse or provide knowledge of this theme.
9. Wang et al's (2017) findings demonstrate the importance of developing new friendships with individuals with SCI as individuals felt they understood their experiences more than their friendship groups prior to injury. These friendships helped them to re-construct their sense of belonging.

*Support from a Lived Experience*
1. Chun and Lee (2008) – peers as providing opportunities for self-disclosure and emotional support.
2. Chun and Lee (2010) - developing meaningful relationships with peers allow individuals with SCI to share life stories, issues and concerns with those who understand.
3. Griffiths and Kennedy (2012) does not provide knowledge
4. Chun and Lee (2013) – does not provide knowledge or endorse theme
5. Kennedy et al (2013) does not provide knowledge or endorse theme
6. Crawford et al (2014) findings shown that becoming involved in parasports allowed participants to make connections with others, with whom they could share their experiences, providing additional sources of support, including asking questions they may not have felt they could ask a health professional, problem solving and learning how to do certain activities.
7. Lijotti et al (2016) – does not endorse or provide knowledge of theme
8. Khanjani et al - Patients with post-traumatic growth stated that they had received great sympathy from other patients with a spinal cord injury because they had common problems, emphasising the role of shared understanding in receiving peer support.
9. Wang et al (2017) – peers as providing opportunities to share thoughts and feelings – self-disclosure.

*Knowing there is Life after SCI*
1. Chun and Lee (2008) – does not provide knowledge of theme.
2. Chun and Lee (2010) – does not provide knowledge of theme.
3. Griffiths et al (2012) found peer support could be an important resource in the development of PTG through showing individuals that life can go on and encouraging their belief that they too can overcome difficulties.
4. Chun and Lee (2013) also mentioned that peer support was seen as important in letting others know that there was life after SCI.
5. Kennedy et al (2013) – does not provide knowledge of theme
6. Crawford et al (2014) does not endorse or provide knowledge.
7. Lijotti et al (2016) does not provide knowledge of theme.

8. Khanjani et al (2017) also showed the role of interactions with peers in facilitating PTG following SCI through helping them gain experience needed to deal with problems, changing their attitude towards their injury and becoming more aware of their capabilities.
9. Wang et al (2017) involvement with peers enabled opportunities that helped to see that there was life with SCI and that life could be wonderful again.

*Appreciation through Social Comparison*
1. Chun and Lee (2008) show that individuals with SCI are able to gain appreciation for their own circumstances through social comparison to those demonstrating higher function and enjoying more successful lives and to those dealing with more serious life issues.
2. Chun and Lee (2010) found participants found it helpful to know there was someone out there who had it worse.
3. Griffiths and Kennedy (2012) – does not provide knowledge.
4. Chun and Lee (2013) found downward social comparison, to those with worse level injuries, who had injuries younger or who had to deal with various life challenges, allowed participants to appraise their lives more positively and recognize the value of their previous and present life.
5. Kennedy et al (2013) – does not provide knowledge nor endorse.
6. Crawford et al (2014) also found that seeing similar others during rehabilitation who were in more difficult situations than their own helped to change perspective on life and gained appreciation for their own abilities.
7. Lijotti et al – does not provide knowledge.
8. Khanjani et al (2017) – does not endorse.
9. Wang et al (2017) does not endorse.

*Giving Back*
1. Chun and Lee (2008) does not provide information
2. Chun and Lee (2010) quote shows participants value opportunities to help peers and let them know there is life after SCI in making sense of experiences and finding meaning.
3. Griffiths et al (2012) - This study also adds that helping others with SCI through sharing stories and advice was an important source of gratitude for individuals living with a SCI.
4. Chun and Lee (2013) discusses opportunities to give back to peers through sharing stories and finding value in volunteering.
5. Kennedy et al (2013) findings that opportunities to help others with SCI was an important source of gratitude following SCI.
6. Crawford et al (2014) findings showed following their injury individuals that SCI taught them that everyone has a unique story and to be more caring and to be less judgemental to others. As part of this individuals felt it was important to educate and protect individuals who had suffered similar experiences.
7. Lijotti et al (2016) – does not provide information.
8. Khanjani et al (2017) – does not provide information.
9. Wang et al (2017) - individuals had a desire to give back to disabled peers, including through fundraising, reducing barriers to access and helping them see life can be good with SCI. In doing so they had accomplished a great deal in this field.

**Appendix K: Diagram of findings used as part of reflective process with extract from reflective journal**
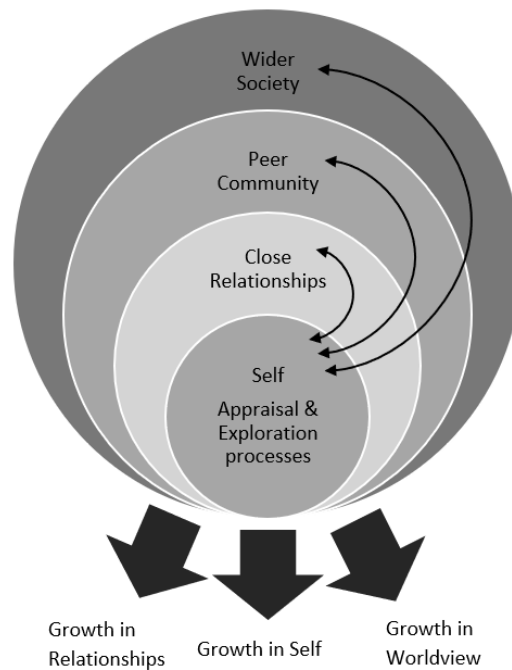


From the data it appears that SCI poses a threat to identity – due to an imposed social identity as a disabled person – and thus questioning of acceptance and belonging within relationships, wider social world, and how this might impact on opportunities. Also ideas about value and worth intertwined in this also. Triggers cognitive and behavioural processes. Cognitive processes appear to be self-disclosure, comparisons and appraisals in relationships. Behavioural processes of testing physical capabilities and limitations to understand new physical body, which can update cognitive schemas/beliefs. Occurs with support from others and within the individuals social world, close relationships, peers and wider society. Close relationships important in initial appraisals, gradually spans out as the individual discovers acceptance. Through this process able to challenge ideas about self, acceptance, value and about self with disability – enabling the rebuilding of beliefs and supporting PTG. Outer circle is about rebuilding life in social world – receiving recognition or linking to social identity. Understanding does feel limited by the current research base and lack of looking at this from a relational/social perspective. The model feels incomplete because of this but is helpful in understanding the links and providing a basis for write up.

# Appendix L. Ethical Approval

**P** **psychethics**

To: Gemma Smith
Cc: Andrew Thompson

Dear Gemma,

The ==Ethics== Committee has considered the revised amendment to your PG project proposal: *Post traumatic growth in spinal cord injury: exploring the process of relationship re-appraisal.* (**EC.21.01.12.6220RA**).

The amendment has been approved.

Please note that if any changes are made to the above project then you must notify the ==Ethics== Committee.

Best Wishes,
Sean

**Appendix M. Digital advertisement**

**Appendix N.**



<div align="center">

**Participant Information Form**

</div>

**Project Title:** Post traumatic growth in spinal cord injury: exploring the process of relationship re-appraisal.

We would like to invite you to take part in our project looking at the experience of post traumatic growth following a spinal cord injury. Please read the information below describing the project and decide whether you would like to take part. Please ask me any questions you may have, and we can discuss these before you decide whether you would like to take part.

**What is the purpose of the study?**

We want to understand experiences of growth following a spinal cord injury. Post traumatic growth refers to positive psychological change that occurs as a result of the struggle with challenging life circumstances or trauma. We know that it is possible for individuals who have experienced a spinal cord injury to describe positive personal change and growth as a result of adapting to their injury. We understand that relationships and interactions with significant individuals, such as family and friends, individuals with lived experiences and professionals, may play a role in the journey to experiencing growth. We are interested in understanding more about the role of relationships in the journey to post traumatic growth.

**Do I have to take part?**

No, it is your choice whether you would like to take part in the project. Please take the time to consider the project and ask any questions before making your decision. Should you agree to take part you are free to request to end the interview at any point. You are also free to withdraw your data following interview up until the point of which this has been transcribed, at which point this would have been anonymised and will be used as part of the study findings.

**What will happen if I decide to take part?**

If you decide to take part I will arrange to talk to you via Skype or telephone to explain the research and provide you with an opportunity to ask any questions. I will check that you meet the criteria for taking part in the study. We will read through a consent form together and you will be asked to provide verbal consent if you would still like to continue.

Should you wish to continue I will ask you questions to collect your demographic information and complete outcome measures for post traumatic growth and wellbeing. You will then be

asked to take part in an interview. I will ask you questions about your experience of positive growth following spinal cord injury and factors that you think might have aided growth. I will also ask you questions about significant relationships and interactions that you think may have played a role in your experience of growth. The interview is expected to last no longer than one hour.

Following the interview, we will have some time to talk how you found this. You will be provided with a debrief form, which will provide you with information for sources of support and contact details for the researcher. You will be asked if you would like a summary of the research findings upon completion of the project.

**What will happen to my information?**

All information you provide as part of the research is strictly confidential. All information you provide will be kept in password protected documents and stored on a password protected computer. Only the researchers will be able to access this information. The consent form will ask for your name. However, this will be stored separately to the other data. I would also like to audio record the interview on a digital recorder so this can be transcribed into a written transcript. Any identifiable information will be deleted or anonymised during transcription. The audio files will be deleted following transcription. Direct quotes from the interviews will be used as part of the write up of the findings, however you will not be identifiable from this information.

**What are the possible benefits of taking part?**

We cannot guarantee that you will personally benefit from taking part in the study, however the research is designed to help inform services for people living with a spinal cord injury. You will also be entered in a prize draw with the chance of winning a £50 book token.

**What are the possible disadvantages of taking part?**

We do not anticipate that there will be any major disadvantages relevant to taking part in this study. You will be asked to give up your time to take part in the study. In talking about your experience of post traumatic growth you may wish to talk about experiences you found difficult in experiencing and living with a spinal cord injury. You might find talking about this upsetting. If this happens you are free to pause or end the interview early. You can also choose not to answer any of the interview questions. You will have the opportunity to talk with me about the interview and I can direct you to any further sources of support. You will be provided with a debrief form, which will provide you with details for support and contact details for the researchers after the study.

I may share information with my supervisor, Dr Andrew Thompson, should I be concerned you or others may be at risk. I will seek to discuss this with beforehand if this is deemed necessary.

**What will happen when the study ends?**

The results from the study will be written up and submitted to Cardiff University as part of the researchers requirements for a Doctorate in Clinical Psychology. A report may also be developed and submitted for publication.

**Who has reviewed the study?**

The study has been reviewed and approved by the School of Psychology Research Ethics Committee Panel at Cardiff University. If you have any concerns or complaints about the research you can contact the Committee in writing:

> Secretary to the Research Ethics Committee
> School of Psychology, Tower Building, 70 Park Place, Cardiff, CF10 3AT

**Contact Details for Further Information:**

*Chief Investigator:*

> Gemma Smith
> Trainee Clinical Psychologist, Postgraduate Student
> South Wales Doctoral Programme in Clinical Psychology
> 11th Floor, School of Psychology, Tower Building, 70 Park Place, Cardiff, CF10 3AT
> Smithg32@cardiff.ac.uk

*Academic Supervisor:*

> Dr Andrew Thompson
> Programme Director, Professor of Clinical Psychology
> South Wales Doctoral Programme in Clinical Psychology
> 11th Floor, School of Psychology, Tower Building, 70 Park Place, Cardiff, CF10 3AT

**Appendix O:**

<div align="center">

**Consent form**

</div>

**Project Title:** Post traumatic growth in spinal cord injury: exploring the process of relationship re-appraisal.

1. I confirm I have read and understood the information sheet for the above study. ☐

2. I have been given the opportunity to ask any questions, and have had my questions answered. ☐

3. I understand that my participation is voluntary, and I am free to decline participation, without giving any reason, without my medical care or legal rights being affected. ☐

4.
    I am aware that I can request withdrawal of my data up to the stage where the interview has been transcribed, at which point the information I provided will have been anonymised and will be used as part of the findings. ☐

5. I understand that the data I provide may be looked at by members of the research teams and sections may be looked at by regulatory authorities.

6. I understand that the information I provided will be kept securely and confidentiality. The information will be held no longer than is necessary for the purposes of the project. ☐

7. I agree for my data to be used in this project. ☐

8. I agree for the interview to be audio recorded and transcribed. The audio recording will be destroyed upon transcription and accuracy checks. The transcript will be anonymous so it will not be possible to identify me from the information. ☐

9. I understand that the results of this study will be written up and used as part of the researcher's assessment of the Doctorate of Clinical Psychology course at Cardiff University. Direct quotes may be used as part of presenting the findings, however my identity will be kept anonymous. ☐

10. I understand that the results of this study may be published, however my identity will not be known. ☐

11. I understand that the research will share information with their supervisor if they are worried that I am at risk of harming myself or if someone else is at risk. ☐

12. I agree to take part in the project. ☐

_____
Name of Participant

_____        _____        _____
Name of person taking consent        Signature        Date

**Appendix P. Written Debrief Form**



**Debrief Information Sheet**

**Project Title:** Post traumatic growth in spinal cord injury: exploring the process of relationship re-appraisal.

Thank you very much for taking part in this study. The study aimed to explore the experience of post traumatic growth following spinal cord injury and understand more about the processes involved. The experiences you shared in interviews will be utilised, along with other accounts provided by individuals living with spinal cord injury, to explore this.

You may have found discussing your experiences difficult or upsetting and/or you might find you feel upset over the next few days. If this is the case, you may wish to discuss how you are feeling, and seek support from, your friends and family. Your GP will also be a good source of support and can signpost you to additional support for your emotional wellbeing. There are also details of various organisations and charities that might be helpful in providing support below:

**Spinal Injuries Association (SIA)**

SIA is a national organisation that provides information, advice and support to individuals living with spinal cord injury.

> Telephone: 0800 980 0501 (freephone advice line)
> Email: sia@spinal.co.uk
> Website:  www.spinal.co.uk


**Back Up Trust**

The Back Up Trust is another organisation providing help and support to individuals living with spinal cord injury.

> Telephone: 020 8875 1805 (between 9am-5pm)
> Email: outreachandsupport@backuptrust.org.uk
> Website: www.backuptrust.org.uk/


**Aspire**
Aspire is a charity providing practical advice services, including information on accessible housing, independent living, assistive technology and grants and welfare benefits advice:

> Telephone: 020 8954 5759
> Email: info@aspire.org.uk
> Website: www.aspire.org.uk/


**Samaritans**

The Samaritans is a registered charity that aims to provide emotional support to anyone experiencing emotional distress and struggling to cope.

Telephone: 116 123 (freephone available 24hours a day, 365 days a year)
Email: jo@samaritans.org
Website: www.samaritans.org/

**Further Contact Details**

If you have any further concerns or would like to discuss your involvement in the research further please contact the researchers using the information below:

*Chief Investigator:*

Gemma Smith
Trainee Clinical Psychologist, Postgraduate Student
South Wales Doctoral Programme in Clinical Psychology
11th Floor, School of Psychology, Tower Building, 70 Park Place, Cardiff, CF10 3AT
Smithg32@cardiff.ac.uk

*Academic Supervisor:*

Dr Andrew Thompson
Programme Director, Professor of Clinical Psychology
South Wales Doctoral Programme in Clinical Psychology
11th Floor, School of Psychology, Tower Building, 70 Park Place, Cardiff, CF10 3AT

If you have any concerns or complaints about the research, you can contact the Committee in writing:

Secretary to the Research Ethics Committee
School of Psychology, Tower Building, 70 Park Place, Cardiff, CF10 3AT

**Appendix Q: Risk Assessment Pathway**

```
Psychological distress indicated
   │
   ▼
Pause interview and conduct risk assessment
```

**Top row (grey):**

Psychological distress
No suicidal ideation
→
Discuss support systems in place (friends, family, services GP) and coping strategies.
→
Agree plan for individual to seek support
→
Check whether participant wants to continue with interview.

Following ending, give full debrief including agreed plan. Check participant feels ok to end.

**Green row:**

Psychological distress

Suicidal ideation, no plan, no intention
→
Discuss and advise to seek help from support systems in place (friends, family, SCI or mental health organisations/services, GP) Discuss coping strategies. End interview
→
Agree plan to seek support

Inform of duty of care. Offer to contact GP on participants behalf.

Inform research supervisor.

**Yellow row:**

Psychological distress,

Suicidal ideation, with plan, no intention
→
Discuss and advise to seek help from support systems in place (friends, family, SCI or mental health organisations/services, GP) Discuss coping strategies. End interview
→
Agree plan to seek support

Inform of duty of care. Request GP information to contact on participants behalf.

Inform research supervisor.

**Red row:**

Psychological distress

Suicidal ideation with plan and intention
→
Discuss and advise to seek help from support systems in place (friends, family, SCI or mental health organisations/services, GP) Discuss coping strategies. End interview
→
Agree plan to seek support. Stay with participant on call.

Inform of duty of care. Request GP information to contact on participants behalf. Inform research supervisor.

**Red (convergence box):**

If under care of CMHT, request CMHT information and inform as appropriate.

If out of hours, discuss and inform local crisis team of urgent risk

Assess capacity if participant refuses treatment, and document.

If necessary, call 999. Stay with participant until ambulance arrives.

**Grey (final box):**

Inform GP as appropriate. Document conversations and outcome appropriately. Seek supervision

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**Appendix R:  Demographic Form**

**Demographic Form**

Project Title: Post traumatic growth in spinal cord injury: exploring the process of relationship re-appraisal.

Participant Number: _____

1.  Gender: _____

2.  Age: _____

3.  Ethnicity: _____

4.  Current Marital Status: _____

5.  Current Occupation: _____

6.  Current Employment Status: (please circle)

Full-time Employed          Part-Time Employed          Unemployed

Retired          Student          Volunteer          Other

7.  Injury Type: _____

8.  Is your injury complete or incomplete? (please circle):     Complete          Incomplete

9.  How did you acquire your Spinal Cord Injury: _____

10. Age when Injury Occurred: _____

11. Marital Status when Injury Occurred: _____

12. Occupation when Injury Occurred: _____

13. Employment Status when Injury Occurred: (please circle)

Full-time Employed          Part-Time Employed          Unemployed

Retired          Student          Volunteer          Other

**Appendix S. The Post Traumatic Growth Inventory Short Form (PTGI-SF, Cann et al., 2010); 2) The Patient Health Questionnaire-2 (PHQ-2, Kroenke et al., 2003); and 3) The Generalised Anxiety Disorder 2 Item (GAD-2, Kroenke et al., 2007).**

### Posttraumatic Growth Inventory –SF

Indicate for each of the statements below the degree to which this change occurred in your life as a result of the event using the following scale.

0= I did not experience this change as a result of my crisis.

1= I experienced this change to a very small degree as a result of my crisis.

2= I experienced this change to a small degree as a result of my crisis.

3= I experienced this change to a moderate degree as a result of my crisis.

4= I experienced this change to a great degree as a result of my crisis.

5= I experienced this change to a very great degree as a result of my crisis.

1. I changed my priorities about what is important in life. (V-1)

2. I have a greater appreciation for the value of my own life. (V-2)

3. I am able to do better things with my life. (II-11)

4. I have a better understanding of spiritual matters. (IV-5)

5. I have a greater sense of closeness with others. (I-8)

6. I established a new path for my life. (II-7)

7. I know better that I can handle difficulties. (III-10)

8. I have a stronger religious faith. (IV-18)

9. I discovered that I'm stronger than I thought I was. (III-19)

10. I learned a great deal about how wonderful people are. (I-20)

# phq-2 & gad-2 screening

| PHQ-2 GAD-2 | Over the **last 2 weeks** (or other agreed time period) how often have you been bothered by any of the following problems? | not at all | several days | more than half the days | nearly every day |
|---|---|---|---|---|---|
| 1. | Little interest or pleasure in doing things | 0 | 1 | 2 | 3 |
| 2. | Feeling down, depressed, or hopeless | 0 | 1 | 2 | 3 |
| 3. | Feeling nervous, anxious or on edge | 0 | 1 | 2 | 3 |
| 4. | Not being able to stop or control worrying | 0 | 1 | 2 | 3 |

Questions 1 & 2 screen for depression, with a total score of 3 or more for these two items suggesting the strong possibility of clinical depression.

Questions 3 & 4 screen for anxiety (GAD, panic, PTSD & social anxiety), with a total score of 3 or more for these two items suggesting the strong possibility of clinical anxiety.

Kroenke, K., R. L. Spitzer, et al. (2003). "The Patient Health Questionnaire-2: validity of a two-item depression screener." Med Care 41(11): 1284-1292.

Kroenke, K., R. L. Spitzer, et al. (2007). "Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection." Ann Intern Med 146(5): 317-325.

**Appendix T. Interview Schedule**

**Areas of Growth**

1. Individuals often report both positive and negative changes following a SCI. Could you tell me about any changes you have experienced following your SCI that you would consider to be positive?

a) Are there areas in your life that have become more important to you now than before your SCI?

b) Are there areas in your life that have become less important to you now than before your SCI?

c) What have the changes you have experienced since your injury helped you learn about yourself?

d) Have you experienced any positive changes in your relationships with others?

e) What have the changes you experienced taught you about other people? For instance, family, friends, others with lived experience?

f) Has your spinal cord injury changed the way you look at life?

**Processing**

1. What helped you make sense of your SCI?

a) Were there certain things you did that helped you come to terms with your injury and the changes?

b) What did others close to you do that helped you make sense of your SCI?

2. What do you think helped you to experience the positive changes?

**Relationships and Growth**

We are interested in understanding more about how important relationships with friends and families and other significant people have impacted on how you have adjusted to living with a SCI.

1. Could you tell me about any specific people who have influenced the way you see your SCI?

a) Could you tell me about what role your friends and family have played in learning to live with your spinal cord injury?

b) how did those closest to you respond? How did they view your injury?

c) Did those around you respond in the way you had expected following your SCI?

d) Did you talk about the impact of your SCI and how you felt with family, friends or colleagues?

d)  Have you had or sought contact with others who have experienced a SCI? What did you learn from this?

2. Could you tell me about any significant interactions that have altered how you felt about your SCI?

a) For instance, with other people with SCI? Friends? Family? Partner?

3. Could you tell me about whether you have experienced any changes in your relationships with others since your SCI?

a) Did you experience any challenges in your relationships?

b) How did you overcome these challenges?

c) What did others do to help with overcoming changes or challenges in your relationships with them?

**Final Question**

1. Is there anything which you would like to add that we have not covered or that might be useful to others who are adjusting to living with a SCI?

# Appendix U. Example of Coding Progression

## PP1

| Theme | Category | Focused Coding | Transcript |
|---|---|---|---|
| Safety - Being there for me | Being there for me | Partner being with him after accident. | Participant: yeah my main example would be *name omitted* my partner, we were going out about a year and a half when my accident happened and she was in, she was in *location omitted* with her parents when it happened, so first she thought it was a concussion or something and then as soon as she found out that it was a bit more serious than that she got a plane at 5 in the morning or something and I mean she was due to start a job two weeks after my accident and just I don't know move into a flat and just cancelled all of that and was with me, so it really it proved to us how much we meant it I suppose, meant to each other. And then theres lots of difficult stuff, changes, that come with the life of spinal cord injury and working those out, talking them through, um getting through those things as a team it kind of strengthened our relationship. Because I was pretty independent and happy to rush ahead and do it all, she has a disability as well, um from a stroke when she was a child |
| Safety – being there for me | Being there for me | Partner prioritising him/putting own plans aside. | |
| | | Proving how much they meant to each other. | |
| Enabling – nurturing independence | Nurturing enabling independence or doing it together | Working as a team. Strengthened relationships. | |
| | | Relating differently to others. Working as a team. | Interviewer: yeah<br><br>Participant: so she, she was, she found it difficult to keep up with me on a hike or to err, shes really sensitive about cooking a meal for example so perhaps I did lots of that stuff but being, being, it's sounds bad, its a bad way of saying it but being brought to her level, its not really the right way of saying it, but having difficulties of my own has made me see better how to do stuff as a team instead of just to do stuff<br><br>Interviewer: it feels like theres something about a shared experience there or a shared understanding, is that what you mean? |
| | | Improving function as a couple through talking about difficulties. | Participant: yeah and there's stuff I find difficult and she doesn't, stuff she finds difficult and I don't and then us even talking about that improves the way we function as a couple<br><br>Interviewer: that's really interesting. I've got more questions further along about relationships and I'd really like to ask a few more questions about that if that's ok?<br><br>Participant: yeah |

Comments (Gemma Smith):
- Giving an example of positive changes in relationship.
- Describing duration of relationship before injury
- Describing where his partner was and what she thought when she got the news of his accident.
- Describing partners actions went she found out about the seriousness of his injury.
- Describing partners actions when she found out about the seriousness of his injury
- Describing how SCI proved how much he and his partner meant to each other.

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PP2

| Themes | Categories | Focused coding | |
|---|---|---|---|
| Enabling – nurturing or doing it together<br><br>Safety – being there for me<br><br><br><br><br><br>Enabling – doing it together<br><br>Enabling – nurturing | Dong it together. Being there for you. Seeing and meeting my needs.<br><br><br><br>Doing it together. Having independence encouraged or nurtured. | Going through it with you.<br><br>Giving family insight and understanding into SCI.<br><br>Seeing the struggles and progress.<br><br><br><br>Having family there to help learning.<br><br><br><br>Wanting to keep me safe. | Participant: yeah definitely like I say it was so important to have that kind of family around you when you are first injured just as kind of moral support to kind of go through it, I suspect I don't know for sure but I suspect it kind of helped them a bit to kind of see me kind of getting through things and gave them a bit of an insight into and understanding of kind of the injury which probably they wouldn't have got if I moved back into the flat that I couldn't have got into in *location* if I just moved back there then they would have never seen that sort of development I don't think, which probably to the outsider happened quite quickly but when you are in there probably it seemed to take a long time to sort of build up your strength and you know gradually build up those steps from small trips to *location* to maybe taking a flight to Scotland or a flight to Ireland and then eventually having the confidence to go over to Europe or go across to America, I think like to me that felt like a long, a lot of kind of small steps to get to those, to get to those kind of goals of doing a long haul flight, there was a lot of kind of stuff in between that, but for the outsider they wouldn't have realised what went into those things, of getting to that point of feeling confident to fly long haul to America or whatever it might be, so I think yeah having family there to help learn those small steps was really really important<br>Interviewer: thank you, and I'm wondering if people responded in the way you might have expected them to respond following your spinal cord injury?<br>Participant: I guess I just didn't have any idea how they would, like as I say my mum was probably of the side of kind of you know wanting me to stay safe and not take any risks and don't do this, don't do that, and partly maybe because of the way that I had the injury she was a little bit more risk aversive whereas dad was more kind of get on and do this and that |

Gemma Smith

Describing the importance of having family around him after SCI

Reply

Gemma Smith

Describing importance of having family around when first injured for moral support.

Reply

Gemma Smith

Wondering if it was helpful for his family that they were together after injury.

Reply

Gemma Smith

Wondering if it was helpful for his family's understanding to be around him after injury

Reply

Gemma Smith

Describing how he thinks his family would not understanding as much about his SCI if he did not live with them.

**Appendix V. Example of Conceptual Memo Writing**

**Category - Being seen as the same**

*Definition*

Participants spoke about the importance of family members and friends reinforcing that they are the same person. This was achieved by maintaining the same dynamics or style of communicating with the person, not allowing awkwardness in to the relationship, and not reinforcing ideas around vulnerability. This seemed to protect the participants sense of self at a time where this is shaken, and enabled them to grow from the same person and to learn more about themselves.

This was shown in codes "Being the same person to his parents", "being seen the same", "being treated the same", "Treating me the same", which demonstrates ideas around being seen and treated the same by close others as well as codes such as "taking the mick out of me", "not treading on eggshells", "relationship with kids remaining the same" which highlights the importance of continued relational dynamics representing being seen as the same.

The definition or ideas are described below by Harry and Thomas.

"They just treated me like I was me, because I was, I was, I am still me, just because I've broken my spinal cord doesn't mean that I'm a different person, I think maybe you grow to be a different person but you are a continuation of the same person…the first time that I realised I was going to be ok was when my, one of my best mates came into hospital to see me and was like of course it's you that's broken your neck Harry, honestly you always like attention don't you, and it was that sort of, piss taking with your friends" – Harry

"people were really worried about me all the time, you know getting into cars or just trying to do daily things they were really worried and I get why because I'm sort of almost could be seen as maybe like a bit of a broken human…I was like no, I'm going to tell you to F off in a minute, just kind of that really, making sure I'm seen, making sure I am still seen as me not disabled me…I was quite quick to go its very annoying and to be honest it makes me feel like you see me as a disabled person rather than just a normal person so stop that" – Thomas

*Conditions under which it arises, is maintained and changes*

Participants whose families and friends maintained the same style of communication e.g. use of humour, continued values, continued approach to parenting etc provided a source of consistency and stability – giving the implicit message that they are the same person to them and that the relationship would remain the same despite the significant changes – reinforced continuity of sense of self. For Harry this was related to "piss taking", Tony this was about "taking the mick" and "dark humour" with his children whereas for Max this was about "*doing the same things*" in relation to getting out in nature and being with each. Its about continuation of same relational dynamics. This is different to not seeing the disability/pretending the disability is not there, but its about seeing the person is "still me" despite a changed body.

There was discussion for many participants of SCI creating "awkwardness" (Harry) in relationships, or how some people struggle to "know how to deal with it" (Polly), which could lead to people struggling to be around them or noticed differences in how they were related to. There was also a sense that visible disability could lead to close others offering help that was not needed described by participants using terms "*people having very low expectations of you*" (Lana), "*worrying about me all the time*" (Thomas), *"infantilising you"* ,*"being too worried about everything"* (Louise), *"fussing over me"* (May).

This could highlight "disabled me" (Thomas) and had the potential to undermine self-identity and reconstruction of identity that could lead to PTG.

If relationships do treat them differently this can be worked through in the context of a safe relationships. For Thomas he was able to work this through with his dad and close friend which enabled him to maintain a sense of self because they then stopped treating him differently. Whereas for participants such as Tony and Pete where there was not this open dialogue they appeared to internalise disabled self and struggled with identity for a number of years. Participants could also reinforce sense of self by distancing from the people or from moving the problem to being held with the other person e.g. "*that's just where they are at*" (Louise) or "*it just shows you peoples real colours*" *(Tony).*

### Consequences

Being seen as the same can reinforce "I am a continuation of the same person" (Harry) and support the individual to learn about the self e.g. "I am not my physical body" (Louise). It can help to challenge ideas about disability on the self and support the person to see that they are still valued, accepted and seen as strong despite physical limitations e.g. "*my friends see me as strong"* (Thomas). It can protect against negative impacts on self image and internalising a "disabled me". This was particularly seen when this is not present, which can highlight *"disabled me"* leading to the person feeling different or feeling that they will be seen by others as different/treated different by others. For Tony his friends treating him different seemed to reinforce a disabled identity – he talked of himself using derogatory terms such as "cripple". For Pete also there were themes of being treated differently and been seen in a different way, which seemed to hinder his beliefs about being accepted by his community and possibilities for the future e.g. "*because I'm disabled, they just put me down in that category and don't think of me as a person that's just like anyone"* which reinforced how his ability to achieve his goals as part of the working community were hindered by SCI - *"my main goal in life when I was young was to get a job and also to socialise as it were, go and be out in that crowd and try and you know get a girlfriend and try and move forward in life and get a job and work and get a girlfriend and then that's the steps to being able to carry on in life, the steps of being, of growing up, when you move out and you get your own, more responsibilities and stuff but then because of my injury that all went turned upside down".*

When this is not present in can result in loss of some relationships as the person struggles to be around them or they become frustrated with being treated differently. Polly – *"I've lost 1 or 2 friends who don't quite know how to cope with it".* Louise – "*there was a couple of people who didn't kind of reach out at all, which obviously was slightly sadder, but I was not that close to them before and a couple of people have found it like they don't really know how to react with the wheelchair or when to help or when not to help*" – shows how friends can be lost too. Whether or not this impacted on sense of self varied between participants – for Louise she felt that she had a strong sense of self and therefore it was less impacted on by this than Tony for example who internalised disabled ideas due to losing friends because they saw him as different.

Harry's quote highlights how being treated differently has the potential to make participants feel alienated and not accepted in society: "the worse thing that can happen is that everyone around you feels that they are treading on egg shells the whole time because then you feel, you already feel isolated as it is but if everyone is treading on eggshells around you the whole time you never feel part of society properly again,  you always feel that level of alienation so having people willing to just take the piss out of you is always a good thing" - Harry

*How this relates to other themes*

Relates to nurturing independence theme – being allowed to continue roles and express independence – important in still being seen as the same – as capable, independent, strong person – somewhere who does not need to always be cared for. Not being fussed over and allowed to get on with things.

Relates to being there – if there is awkwardness in relationship potential to break down, turn away from them and being able to be there emotionally for them at times too. If the person is seen for "disabled self" then family members can find it difficult to talk about change. For example, Pete talked about how his family, particularly his dad was devastated due to the difference ("my dad was devastated and I know he was, not that he, I think its because of that father – son relationship, you know playing football together and going fishing" and struggled to have open discussions because of this *"*he would find me asleep in the kitchen just absolutely slaughtered and just tell me to go to bed and now I wish he had spoke to me about it, why was I going out and getting hammered, why was I coming home falling asleep in the kitchen so drunk not even being able to go to bed but he, bless him, he wouldn't talk to me because I don't know". Whereas Thomas had a secure relationship and could talk about being treated different to change dynamics.

Relates to accommodating or acknowledging difference – i.e. when others just see them as the same and do not recognise difference it is hard for them to accept changes and embrace new life due to trying to continue to be the same person in a different physical body. As shown by Lana: *"I didn't identify as having a disability because all my friends were mobile, were able-bodied and they saw me as I was before it was fairly easy to pretend that my identity hadn't changed that much, it was when I moved at the point, and it was the first time that people saw my wheelchair before they saw me"* and Pete: *"a lot of people don't treat me as any different, treat me as I've just sat down, which was a bad thing when I was first injured because as I was saying I didn't look after myself because all my mates were treating me like I was just sat down"*.

**Appendix W: Conceptual Memo for category shaken world – theme unable to be included due to word count but summarised in results and included in model**

**Category - Shaken world**

*Definition*

Participants talked about the significant impact of SCI on their world, including day to day struggles, and how this interrupted intended life course and imagined future, requiring them to take a step back and re-evaluate life plans and future possibilities. This was described by Max as "shaking up everyone's life who has it". For some participants a changed physical self and blocked goals for the future could result in a threat to identity – this was also related to ideas about "disabled me" (Thomas) due to changes in how others related to them or interacted with them – appeared to result in disrupted identity for some. There was also a sense that participants beliefs about relationships were "shaken" by SCI as they questioned whether others would "stick by me" (Dave) and questioned whether they would be able to gain relationships in the future due to concerns about attractiveness and what they could bring to a relationship with a changed physical body. Others talked about how SCI and how others responded showed their "true colours" – indicating they were looking out for changes and re-evaluating relationships. Overall, seems that SCI shakes or interrupts beliefs about self, others and world – potentially interrupting identity. Person is also confronted with ideas about disability – requiring them to understand impact of acquired disability on self, world and others.

Shown by quotes below:

"I was only young when I was injured, my main goal in life when I was young was to get a job and also to socialise as it were, go and be out in that crowd and try and you know get a girlfriend and try and move forward in life and get a job and work and get a girlfriend and then that's the steps to being able to carry on in life, the steps of being, of growing up, when you move out and you get your own, more responsibilities and stuff but then because of my injury that all went turned upside down" – Pete

"my issue is making assumptions about how women look at me now I'm in a wheelchair, I'm not in a wheelchair permanently being an incomplete paraplegic I use crutches and stuff like that, to me it still doesn't look attractive" – Tony

yeah I think its definitely, for me it definitely made me take a step back from the life I was living before… and sort of having the injury, sort of I didn't have anywhere to go other than moving back in with my parents , which at the age of 26 was something that I found a little bit, well it wasn't what I wanted to be doing , that wasn't in my life plan, - Dave

your identity when you have your accident gets shattered essentially, so I was Lana the horse rider and I couldn't be that anymore - Lana

Shaken beliefs appeared to trigger cognitive and behavioural processes of trying to understand the impact of SCI, as well as to rebuild life. These processes appeared to support the individual to rebuild beliefs and lives – which could lead to the experience of PTG in many areas.

*Conditions under which it arises, is maintained and changes*

How "shaken" the individuals world is appears to be related to initial beliefs about the impact of SCI on self, relationships and place in the world. For Pete and Tony SCI appeared to have a significant impact on beliefs about self and intended future due to culture/working community. Tony was ex-army and his ideas about being a man and fitting in with the "brotherhood" appeared to be shaken by a changed physical body and beliefs about disability. Petes beliefs about intended life course and self were also particularly shaken by SCI due to beliefs about feeling part of working community were

particularly shaken. For these two examples it appears to be about how important physical strength is for maintenance of life course and feeling part of the community. For Lana her world was shaken due to her life plan of being a competitive horse rider being blocked meaning she had to completely rebuild her ideas about her future – her identity was also tied up in this too: "your identity when you have your accident gets shattered essentially, so I was Lana the horse rider and I couldn't be that anymore… there was also an element of not recognising who I was on a horse anymore so constructing that new sense of self was really important". In comparison Louise appeared to be less shaken by SCI as she described how she felt her body was not her, and how she felt she could still achieve her life goals with SCI – it appeared to be important that she knew she would be enabled by her social network to continue to achieve these things too.

Previous experience with disability could also mean that participants already had positive beliefs about what life could be like following SCI as Max talked about working with a man with SCI prior to acquiring his SCI and how he "already knew life could be pretty good". Whereas for Pete he talked about how he had very little contact with anyone with disability and neither had his community, which meant he did not have examples of how life could be good or that he could still achieve things he wanted to with a SCI – he held particularly self-limiting views about disability prior to his engagement with peers.

All participants demonstrated that in some way their world and beliefs were shaken by SCI but how much they were shaken and in which ways appeared to depend on previous experiences and initial appraisals about how life would be shaken and the impact it would have on self, world and others.

### *Consequences*

A shaken world appeared to lead to cognitive and behavioural re-evaluation processes as the individual tried to understand the impact of SCI, and start to rebuild their life. Cognitive processes appeared to include self-reflection and information seeking from health care professionals, online and from peers – deliberate processes, and more automatic processes – whereby beliefs appeared to be updated and tested as the individual interacted with social world. Which processes individuals engaged with appeared to depend on individual coping styles and those reinforced by the family or within the individuals culture. For Max, who was influenced by ideas about Buddhism, he engaged with a lot of self-reflection to understand the impact: "I'm in my head a lot more and thinking, I mean when your legs don't work very well, when your bladder doesn't work very well for example, but there's, you find another way, there is always another way, you kind of have this different relationship with your body and that means you have a different relationship with your identity…I suppose I'm less egoic, I understand better my place in the world". Whereas for others information seeking helped them to understand the physical impact of SCI and feel able to self-manage - this is shown by Polly and Thomas:

"I really asked everything and anything that's just who I am, I asked so many questions at the hospital…. from the very moment that I knew what it was I just asked questions all the time, read up, its just the same as me I did lots of research and you do learn as you go it's the most peculiar illness"– Polly

"I am quite I am fairly scientifically minded, I'm a mathematician at heart really, so I sort of, when I'm in hospital and the doctor tells me something I go great now tell me scientifically why that happens, so often I am armed with more knowledge about how things work" – Thomas

Other participants talked of actively avoiding thinking about SCI and its impact – which in Ronnie's case appeared to result in struggling to adjust – whereas for others they engaged in behavioural processes of understanding impact on physical self, testing limitations and capabilities and starting

to rebuild life – which could update cognitive beliefs about possibilities and strengths, and help them to re-assess the impact on self and intended future:

"I don't think I have ever sat down and really thought about it, to try and understand it, for me I'm one of those guys whatever happens, you can't change what's happened, you make the best of what you've got so I wouldn't say I have ever made sense of it I've just cracked on because I knew I had things to do, I knew I had to rebuild up life, as soon as I found out basically my legs were gone I knew I had to crack on and do it, washing, ironing, cooking, cleaning as best as I can and stuff like that , so yeah its taught me that I have got, I've learnt about myself how more determined I can be"– Tony

"being active helped because putting myself in new opportunities and new situations repeatedly helped me understand how my body worked but mentally kept my mind occupied so I couldn't sit back and dwell and think about this and that, I was always busy with what else was going on where I was" – Pete

Re-evaluation processes could help individuals to connect with previous self: "I started to get to know who I was again, I was able to get to know how to manage, how to manage as a wheelchair user, I got stronger, I was able to push myself, I was able to do things in different ways" – Lana

Participants described growing from changes and learning from the struggles of a shaken world, which could be experienced as PTG. Post traumatic growth varied between participants, with some experiencing growth in relationships and continuing to struggle with the impact on self (Ronnie), whereas others had learnt about self and developed in terms of own identity:

I think the challenges help you to learn more so because there is such an enormous change, it changes everything about your life, it would be impossible to just smoothly run along, you would, you have to come across challenges to learn the best way to deal with them and you grow from that to the next one and so it goes on – polly

I think I've learnt I've got more of a sense of wanting a better life stuff like that, knowing that there is more out there that I can do , and how strong willed I can be – Tony

in as much as my family is concerned its taught me that they are there even in the direst of moments and that you can count on people – Ronnie

lifes not worse its just different, I hate the word disabled because I am not disabled the world just doesn't enable me to live properly,  but I think that's once you can wrap your head around that you will be a lot happier – Thomas

***How this relates to other themes***

This category appears to be the underlying theme or thing that triggers the other processes. The other categories related to relationships appear to support cognitive and behavioural processes triggered by the shaken world.

Emotional coping and acceptance appear to support these processes, which can be supported by relationships e.g. supporting emotional coping and being there categories - appear to support the cognitive processes as they help to manage emotional distress and soothe emotions to support the person to be in a "settled place" (Dave) where they can make sense of impact through cognitive and behavioural processes. When not in this settled place participants may engage in avoidance behaviours that can prevent sense making of the shaken world and prevent PTG. Self-disclosure with close others can help to rebuild beliefs in a shaken world too.

Being there – close others being there can help to protect from further losses or to prevent world being more shaken by these losses – can help with initial appraisals about the impact of SCI on relationships. Shown in Harry's quote "*a lot of things are going to change, its good to know some things wont*" in talking about friendships.

Information seeking with peers can help to rebuild shaken world. And in engaging with peers participants appeared to update beliefs about disability and be able to understand the impact on self and possibilities for the future. Shown by May's quote: *"she was most definitely inspirational because she was planning on taking her entire family on a cruise to Russia for an anniversary, and I thought then, I mean I've been on a cruise and I thought how the hell are you going to manage but there again there are lifts and you know being on a cruise is no different to being in a house on a way…I mean I was just amazed that she could have what appeared to be almost a normal life with this, with this spinal injury… it was completely affirming that life can go on"*.

Categories of being seen as the same and acknowledging the difference – can help to accept the impact of SCI and start to explore the impact of a shaken world on self and update beliefs.

It also relates to encouraging independence and connecting with values – relationships supporting the behavioural processes caused by the shaken world and in rebuilding beliefs, which can lead to the experience of PTG.

**Appendix X. Excerpt From Reflective Journal**

**Reflective Journal after interview 1 (Max)**

Participant one talked in very thoughtful manner about his experiences and seemed to take time to think through his answers – possibly a reflection of him processing and taking to make sense of his injury and experiences as part of the interview. He is relatively early in his journey so I wonder if this relates to not having a "practiced" story or narrative about his injury and experiences. My ideas about this are likely to stem from working in neuropsychology and observing how patients seemed to have a rehearsed or practice narrative or script that they would tell about their injury to me during initial appointments.

The participant's partner had a stroke when she was younger and experiencing his injury seemed to help him empathise and understand her point of view, also seemed to become more of a partnership from needing her help more and from doing things together – became less motivated or lead by own motivations (less individualistic) and became more thoughtful of others in his thinking (collectivistic)- which seemed to help strengthen their relationships. Participant talked about interesting ideas about family and being welcomed into a tribe by his extended family from seeing the closeness. This made me think about ideas around tribes and social acceptance/connectedness. Idea that injury made him become less motivated by independence and more motivated by collective identity or connectedness.

Talked about the support he needed in terms of sort of ageing/developmental processes – baby in ICU, versus child in rehab/going home, teenage years now – interesting ideas around support and attachments people might need at different stages here. Having family around him important in early stages where he was learning to live with spinal cord injury. This reminded me of ideas from DDP about "being with" – possibly due to current placement in CAMHS and current teaching about it. Need to be mindful of being influenced by clinical practice and teaching.

Ideas about being flexible and not rigid in adaptation important. Ideas about being present and more aware of own body – mindfulness ideas. He is influenced by ideas about Buddhism, which seem to be relevant for his experience of growth.

Ideas about the importance of connecting with peers also came through heavily – troubleshooting and seeing that people can do things – problem solving challenges, others have already done it helpful – I wonder if this is relevant to appraising disability and challenges and understanding that he will be able to do interesting things.

I noticed I felt pressured to be asking the right questions and worrying about what I would ask next during the interview. I was also worried about using the wrong terms or offending with questions and I think I was cautious in the questions I was asking – I wonder if not wanting to offend or insult is a reflection of how people interact with someone with a disability/injury. This became less present for me as the interview progressed.

**Reflexive Journal following interview 2 (Dave)**

Participant two talked a lot about the importance of returning to work for him in him experiencing positive changes. Ideas about importance of feeling valuable in the work place and how colleagues helped him to feel included.

There were ideas about having family around him initially and how helpful this was for him – ideas about stability when practical things were being sorted out, and having them there with him when he went out to do things and having them look after him. Importance of initially being in a settled place.

He talked about friends supporting him taking risks and doing new things that he felt might be inaccessible and the importance of this – this again reminded me of ageing/developmental processes of becoming a teenager and taking risks with friends – finding feet or exploring identity or abilities. Participant one's ideas about maturation likely influenced my thinking about this, so need to be mindful of not becoming too attached to initial ideas and being open to different and contrasting narratives.

Peer support also seen as important – learning from others, feeling connected to others seen as important. Ideas about comparison in terms of own journey – easier in rehab and more difficult outside – charity support important for this. My ideas about social comparison are certainly influenced by my previous research projects at undergraduate and masters level as both of these projects had a theme of social comparison, in body image (under grad) and coping with caring (masters). For me these ideas have also felt really important – that we learn about our place in the world from comparing ourselves to others – possibly because of my own experiences growing up how important doing well in comparison to others was. It feels important to be mindful of my own emphasis on the importance of this in analysing the data and looking out for conflicting ideas.

**Appendix Y. Declaration of Interests for systematic review**

Gemma Smith has worked clinically with individuals experiencing acquired impairment within the field of neurorehabilitation. She has a clinical interest in trauma recovery, including post traumatic growth. She has had a range of training in different theoretical and therapeutic models, but finds herself most influenced by trauma recovery, attachment, and systemic/relational approaches.

Jennifer Moses has worked clinically with people with SCI in rehabilitation for more than 25years and provided academic supervision for the project. Her academic and clinical reflections derived from interest in post-traumatic growth and depreciation and social support processes following SCI. Andrew Thompson has academic and clinical expertise in psychological aspects of long-term conditions, particularly conditions affecting appearance and body-image. He contributed reflections on the findings' resonance with mindfulness, Acceptance and Commitment Therapy (ACT), and self-compassion. Finally, Anna McCullough is a Clinical Psychologist practising in physical health conditions. Her reflections were informed by clinical understanding of how relationships and social support operate systemically to influence well-being and condition management practices. She made reflections on the method and outcomes and links to therapy frameworks including ACT.