

# Working Therapeutically with Parents after the Diagnosis of a Child's Cerebral Palsy: Issues and Practice Guidelines

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Little is known about the effectiveness of psychoeducational support groups on positive adaptation in parents and families after a child has been diagnosed with cerebral palsy. A systematic literature review adopting the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines was conducted to gain an understanding of the process of adaptation in parents with a child with cerebral palsy and the effects psychoeducational support programs have on this process. The databases searched were psychINFO, Taylor and Francis Online, PsychARTICLES, Medline and ProQuest. A total of 1083 papers were found and 19 of those papers were analysed. A narrative approach was used to synthesise the data extracted. A number of factors that influence adaptation within a family after the diagnosis of cerebral palsy in a family member were identified in the review. These factors include, but are not limited to, providing appropriate and relevant information to parents and families, identifying community services and resources available to the family, assisting in the reduction of psychosocial distress, and encouraging the facilitation and collaboration of a strong parent-professional partnership throughout the process. Based on this information guidelines for psychoeducation programs for this client group were proposed.

**Keywords:** cerebral palsy, diagnosis, disability, psychoeducation, adaptation, parent, family functioning, intervention, psychosocial distress, family

## Cerebral Palsy and its Impact

The diagnosis of cerebral palsy can have a profound impact, not only on the diagnosed individual themselves, but also on their parents and siblings. Raising a child who has been diagnosed with cerebral palsy is a challenge faced by many families. Cerebral palsy (CP) is regarded as a developmental disability which impairs movement and posture caused by damage to a child's brain (Buran, Sawin, Grayson & Criss, 2008). CP is reported to be permanent and non-progressive (Buran et al., 2008) and may lead to associated deficits including intellectual, visual and auditory impairments, along with the increased risk of epilepsy (Fleiss & Gressens, 2012). Studies indicate that

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within Australia, approximately 600 to 700 infants are born with cerebral palsy each year and it is ranked in the top 5 most costly diagnosed conditions per capita, costing an average of \$43,000 per individual annually (Access Economics, 2008).

### **Adjustment After Diagnosis and Support Needs**

Children with CP require significant support throughout their lives, therefore, it is important that families are provided with relevant and accessible information regarding the condition and available support services (Buran et al., 2008). Mitchell and Sloper (2002) argued that providing appropriate support and information to families is vital because such support and information empowers the family and enables the family to actively engage in therapeutic programs. Further, Law et al. (2003) suggested that maintaining a quality relationship between health professionals and families encourages families to be involved in every aspect of the services available for the child.

When a child is diagnosed with CP parents and siblings must make a number of adjustments (Rentinck, Ketelaar, Jongmans & Gorter, 2006). Recent research has focused on an individual's positive adaptation to family life after another family member has been diagnosed with a disability (Kruijsen-Terpstra et al., 2013), however, limited research has focused on adaptation after a child has been diagnosed with CP. As explained by Rentinck and colleagues (2006), adaptation is a multi-faceted process which will constantly change over time. They believe that if allied health professionals are able to identify those who are experiencing difficulties after the diagnosis of a child with CP, they may be able to intervene and provide services that will assist towards positive family adaptation. McCulloch and Simon (2011) explained that without appropriate information and interventions, many families are left without the depth of understanding, empathic responses and resources to effectively interact with and care for their family member with cerebral palsy. However, individuals and families can learn to adapt adequately to financial, psychological, social and educational requirements with the use of evidence-based therapeutic treatment plans (Tomasello, Manning & Dulmus, 2010).

According to Jackson et al. (2007), providing appropriate and timely information and support to families after a child has been diagnosed with cerebral palsy can facilitate control and empowerment to the carers involved. Chen and Lukens (2011) suggested that it is also important to include siblings in discussions regarding a child's diagnosis, because siblings are often overlooked when a child has been diagnosed with a disability. Chen and Lukens emphasised that siblings require appropriate information, education and support from other family members and health professionals to ensure their own optimal understanding and development (McCulloch & Simon, 2011). Tomasello, Manning and Dulmus (2010) found that a family-centred, systemic approach to working with families who have a child with a disability may help health professionals meet the varying needs of each family.

### **Rationale and Aims**

From the literature, it is evident that there is a need for health professionals to provide relevant and accessible information regarding the diagnosis of cerebral palsy to

families. This has been highlighted in a number of studies relating to individual families' ideas of their specific requirements (Mitchell & Sloper, 2002; Rahi, Manaras, Tuomainen & Hundt, 2004; Vargus-Adams, 2011), along with what health professionals view as important factors for the delivery of required information (Baine, Rosenbaum, & King, 1995; Mitchell & Sloper, 2002).

Although there are a number of available programs offered to families after a diagnosis, much of the research focuses on providing appropriate information relating to a child who has been diagnosed with an illness or disability in general. There is limited research specifically examining the efficacy of psychoeducation programs for families who have a child who has been diagnosed with cerebral palsy. Further, there appears to be no systematic guidelines to provide effective information and evidence-based support to families after a child has been diagnosed with cerebral palsy.

The aim of this study was to systematically review the available literature and research on group and family interventions for families who have a child diagnosed with cerebral palsy. The literature was critically examined to identify the factors considered to be the most important features of such programs that predict each family member's adjustment following a diagnosis of cerebral palsy.

A further aim of this research was to develop and propose guidelines regarding best practice delivery for service providers who conduct such interventions. This study provides the basis for future research evaluating programs in this field.

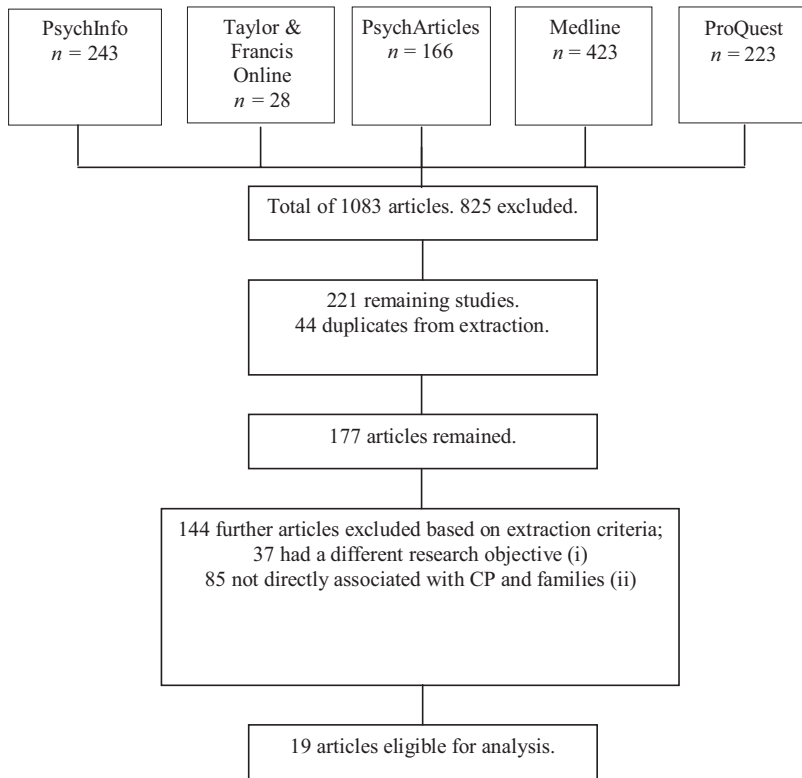
## **Method**

### *Research Design*

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were adopted (Moher, Liberati, Tetzlaff, & Altman, 2009) for this systematic literature review. These guidelines were employed because PRISMA can be applied to a variety of systematic literature reviews including evaluations of interventions. A narrative approach was used to synthesise the data extracted. This is described later in the Data Aggregation section. The study was exempt from ethical review by the Human Research Ethics Committee in Tasmania, Australia.

### *Search Procedure*

A systematic literature search of articles was conducted using psychINFO, Taylor and Francis Online, PsychARTICLES, Medline and ProQuest. The initial search, with key search terms 'cerebral palsy' were used, along with 'diagnosis', 'disability', 'adaptation', 'family', 'parent', and 'family functioning'. The second search assisted to identify research relating to 'cerebral palsy' AND 'psychoeducation' 'support groups', 'social support', 'parental distress', 'information', 'effective delivery of information' and 'family AND information AND diagnosis'. The search was restricted to papers published in English in peer review journals from January 1990 to July 2013. The set time period was selected as researchers have acknowledged that there has been increased awareness about the need to provide families with information regarding the diagnosis of a child with cerebral palsy over the past two decades.

**FIGURE 1**

Selection process for the articles analysed in this review.

### Data Aggregation

A total of 1083 journal articles were found. The titles and abstracts of the articles retrieved from the search were examined, and any articles that were not relevant to the research topic were discarded. The inclusion criteria employed were as follows:

- i) The purpose of the article was to explore and identify the direct impact of parents, caregivers and/or families after the diagnosis of a child's disability.
- ii) The sample of the population incorporated parents, caregivers and families of children with CP.

The full texts of the articles meeting the inclusion criteria were analysed. Any article that did not meet the criteria after analysis was discarded (see Figure 1).

The data retrieved was synthesised using a narrative approach. Guidance on the Conduct of Narrative Synthesis in Systematic Reviews was used (Popay, Roberts, Sowden, Petticrew, Arai, Rodgers, Britten, Roen, & Duffy, 2006). This approach to data synthesis was used because narrative approaches are considered useful when a meta-analysis is considered inappropriate because a range of evidence beyond randomised controlled trials will be explored (Popay et al., 2006).

**TABLE 1**

Year of publication, article focus, and identified key findings from the reviewed articles

Characteristics	n	%
Year of Publication		
1990–1994	1	5.3
1995–1999	0	0
2000–2004	2	10.5
2005–2009	7	36.8
2009–2013	9	47.4
Article Focus		
Parent	9	47.4
Professional	6	31.6
Both Parent & Professional	4	21
Identified Needs		
Psychological Distress	14	73.7
Access to Services & Information	9	47.4
Gross Movement Function Capacity	9	47.4
Service Delivery	9	47.4
Building Client-Professional Rapport	7	36.8
Social Support	7	36.8
Addressing Individual Family Needs	6	31.6
Differences between Mothers & Fathers	5	26.3
Financial Concerns	5	26.3
Planning for the Future	5	26.3
Adaptation	4	21.1
Goal Setting	3	15.8
Siblings	1	5.2

## Results and Discussion

Table 1 details the characteristics of the studies, and includes the year of publication, whether the results of the article were targeting parents and caregivers or service providers, and also identifies the key findings from the reviewed literature.

Table 2 shows a summary of the 19 articles analysed in this study. The table highlights the main aim of the article, the population measured and the key findings of the research. The mass of the articles were research studies (16 articles, 84.2%), and three journals were systematic reviews (15.8%).

### *Important Factors*

Most reviewed studies (14 articles, 73.7%) showed that parents and caregivers experience an increase in stress and anxiety after a child's diagnosis of CP (Sipal et al., 2009; Vargus-Adams, 2011; Pfeifer et al., 2013). The studies suggest that children with CP

**TABLE 2**

Summary of reviewed articles and key findings

Author	Date	Purpose	Population	Key Findings
Almassri et al.	2011	Identify profiles of family needs of families after the diagnosis of a child with cerebral palsy (CP)	579 parents (80% mothers) of children and youth with CP	Four profiles of needs were identified - low needs, needs related to community and financial resources, needs related to child health condition, and high needs
Bourke-Taylor et al.	2013	To identify the costs and needs associated with children requiring high levels of equipment and care needs	29 families who have a child diagnosed with CP	Equipment and care needs for children with complex disabilities are vast, and out-of-pocket expenses for these families are excessive. Families experience huge financial constraints to assist their child with positioning, mobility devices and adapted toys and leisure items. Children with severe levels of CP need more parental assistance to engage in play and recreation activities
Buran et al.	2009	To examine the needs expressed by parents who have children with CP	475 parents (89% mothers) who have a child with CP	Parents identified that access to services and information are their greatest need, followed by difficulties and obstacles to care, such as financial burden, social isolation and planning for the child's future
Davis et al.	2009	Examine the impact on the quality of life for mothers and fathers of a child diagnosed with CP	24 mothers (65%) and 13 fathers (35%) who have a child with CP between the ages of 3 and 18 years of age	Physical well-being, social well-being, freedom and independence, family well-being and financial stability are greatly affected when caring for a child with CP. Parents often feel under supported and believe that they have limited access to resources and information from services

**TABLE 2**

Continued

Author	Date	Purpose	Population	Key Findings
Davis et al.	2011	Examine the relationship between a parent's perceived view of their child's quality of life and parental psychosocial distress; and identify whether parental psychosocial distress impacts upon the relationship between the severity of a child's disability and parent-rated quality of life	201 primary caregivers of children between the ages of 4 and 12 with CP.	Parental distress was negatively correlated with proxy-reported quality of life, however, correlation was medium to weak. Severity of disability and parental perceived quality of life impacted on the following domains : social well-being and acceptance - feelings about functioning - participation and physical health - emotional well-being and self-esteem - and pain and impact of disability
Fiss et al.	2013	To understand the levels of family functioning, expectations and support within families who have a child with CP	398 children with CP (mean age 44.9 months) and their parents	Parents reported high levels of expectation, and provided strong support to their children. Parents who have children with lower gross motor function capacity reported lower levels of expectations for their child.
Hirose & Ueda	1990	Identify the cognitive processing of parents after the diagnosis of their child's CP; identify social supports during the 'acceptance' phase; and examine the differences in mothers and fathers in raising a child with CP	28 mothers (70%) and 12 fathers (30%) who have a child with CP	Mothers and fathers reactions to the diagnosis of a child's CP vary significantly - Mothers require additional support with 'acceptance' during the child's infancy period - Fathers require additional support with 'acceptance' during the child's toddlerhood, school-age and adolescence periods - The most important social support is a spouse
Kruijssen-Terpstra et al.	2013	To identify experiences and related factors that impact upon parents of children with CP undergoing physical and/or occupational rehabilitation	NA - systematic review	Parents were identified as having different needs over time, and require time to build rapport with their child's therapists. The levels of daily demands, support networks and provided resources can impact on parental distress, as can the attitudes of the community relating to their child's CP diagnosis

**TABLE 2**

Continued

Author	Date	Purpose	Population	Key Findings
Majnemer et al.	2008	Compare a parent's view of their child's quality of life with their child's own perception of their quality of life	48 children with a diagnosis of CP and their parent	Parent's views of quality of life are generally comparable to their child's perspective. Parents view their child's psychosocial domains as lower than what their child views their own psychosocial quality of life domains
Miller et al.	2003	Identify whether information held in a register of children who have been diagnosed with CP is being made available to families	13 families of children diagnosed with CP identified on a CP register	Many parents would like to know more information about the register. Parents also expressed concerns that are not associated with the register, including gaining more access to information about equipment, being treated as equals by service providers, and to have earlier and understandable diagnosis of their children
Mophosho et al.	2010	Observe and discuss children's interactions and perceptions of their sibling with CP, and identify how these views impact upon their development	4 children who have a brother or sister diagnosed with CP	Children who have a sibling diagnosed with CP should also be included in family interventions. Siblings can act as supportive role models for the diagnosed child, and may foster a greater bond throughout their development
Navalkar	2004	To explore how fathers view their role as a father after the diagnosis of their child's CP	13 fathers of children with CP	Fathers express empathy for their child with CP, and find creative ways to deal with problems related to the diagnosis of their child. Fathers reported booklets and relevant information as helpful after the diagnosis of CP in their child
Ogwumike et al.	2012	Examine the psychosocial impact of parents and families after the diagnosis of a child's CP; and examine any associations between severity of CP and parental psychosocial distress	117 parents of children with CP, and 117 parents of children with no developmental disability	Caring for a child with CP imposes great psychosocial challenges upon the family irrespective of the level of gross motor function capacity and severity of the diagnosis



TABLE 2

Continued

Author	Date	Purpose	Population	Key Findings
Palisano et al.	2009	To examine the differences of needs reported by parents based on the child's gross motor function capacity and age; to identify the most common needs expressed by parents; and to examine whether these needs vary depending on the severity of the child's CP diagnosis	501 parents (77.6% mothers) of children diagnosed with CP	The number of family needs varied based on the child's gross motor function capacity, but not on the age of the child. Parents expressed needs for information on current and future services, planning for the child's future, and more personal time for themselves. Parents who have a child utilising wheeled mobility express an increased need for financial support
Pfeifer et al.	2013	To explore how social support is received by caregivers of children with CP	50 children aged between 3 and 12 years and their respective caregivers	Direct and extended family members, along with significant friends, are reported as being the caregivers' primary source of social support. Caregivers report satisfaction with the level of support that they receive.
Rentinck et al.	2006	To understand the process of parental adaption after the diagnosis of CP in a child	NA - systematic review	Parental and family adaptation to the diagnosis of CP in a child will vary throughout a child's development and during changing stages of life events
Schuengel et al.	2009	To identify whether parents of older children with CP show greater resolution than parents of younger children with CP; and to identify whether parents with a child with less severe CP displays more resolution than parents who have a child with diagnosis of CP with greater severity	255 parents who have a child with CP between the ages of 1.4 and 17.3	Most parents will gain resolution after the diagnosis of their child's CP. Unresolved resolution was found more often in parents of younger children, and in children who have a more severe diagnosis of CP

**TABLE 2**

Continued

Author	Date	Purpose	Population	Key Findings
Sipal et al.	2009	To examine whether parental stress and support that caregivers experience predicts behavioural problems in children diagnosed with CP; and to explore if the severity of CP will impact on parental stress and support	110 children diagnosed with CP and their parents. Physicians recruited to rate the child's gross motor function capacity	Children with CP do display higher levels of behavioural problems than the general population, but this is said to weaken over a 3-year period. Children with more severe CP display more externalising behaviours, particularly boys. Increased levels of stress and less social support in parents is positively related to children's behavioural problems
Vargus-Adams	2011	To explore the impact of parental stress after the diagnosis of a child's CP	NA - systematic review	There is an association between high levels of parental distress and having a child with CP who also has an intellectual disability, communication impairment, or increased pain. Service providers should encourage a child's functioning, and support parents and families as an integrated system

require increased levels of support and care, which cause families to experience physical and emotional distress (Rentinck et al., 2006; Davis et al., 2009; Palisano et al., 2009; Fiss et al., 2013; Pfeifer et al., 2013). Levels of parental stress were associated with a child's level of gross motor function capacity (Davis et al., 2009; Palisano et al., 2009; Schuengel et al., 2009; Sipal et al., 2009; Fiss et al., 2013), whether or not the child had an intellectual disability (Buran et al., 2008; Palisano et al., 2009; Vargus-Adams, 2011; Pfeifer et al., 2013), the level of communication impairment (Buran et al., 2008; Almassri et al., 2011; Vargus-Adams, 2011), and the level of physical pain associated with the CP diagnosis (Sipal et al., 2009; Vargus-Adams, 2011). Interestingly, research by Davis and colleagues (2009) and later in studies by Ogwumike, Adeniyi and Obidiegwu (2012), Fiss et al. (2013) and Pfeifer et al. (2013) found that parents of children diagnosed with CP experience a significant increase in levels of psychological distress that was not influenced by the level of gross motor function capacity of the child. However, five of the studies showed that families who have a child with a more severe diagnosis will require more assistance with home modifications (Palisano et al., 2009; Bourke-Taylor, Cotter & Stephan, 2013), transportation (Almassri et al., 2011; Bourke-Taylor et al., 2013), financial assistance (Buran et al., 2008; Davis et al., 2009; Almassri et al., 2011), and access to services and recreational activities for their child (Buran et al., 2008; Almassri et al., 2011; Bourke-Taylor et al., 2013). It may be that distress associated with gross motor function capacity is mediated by how well such disability can be overcome with assistive technology and devices. However, these devices come at a cost, which in turn impacts on parents' psychological well-being.

The financial cost associated with having a child with CP is extensive, and the costing associated with CP was discussed in 26.3% of the reviewed articles. It has been suggested that financial concerns may be an important factor that limits access to community services and resources for some families (Buran et al., 2008; Almassri et al., 2011; Pfeifer et al., 2013). From the studies analysed, it was identified that the costs to families caring for a child with CP are not only incurred directly, such as home modifications, medical bills and mobility assistance equipment (Miller, Colligan & Colvert, 2003; Palisano et al., 2009; Bourke-Taylor et al., 2013), but also indirectly such as loss of employment by the primary caregiver, specialist transportation and childcare for siblings (Buran et al., 2008; Sipal et al., 2009; Bourke-Taylor et al., 2013).

Buran et al. (2008) identified that parents regularly express concerns regarding substantial financial burden. Studies have demonstrated the importance of service providers addressing financial concerns by providing information about government funding contributions (Bourke-Taylor et al., 2013), private insurance options (Almassri et al., 2011; Bourke-Taylor et al., 2013), community services and resources (Buran et al., 2008; Davis et al., 2009; Palisano et al., 2009; Almassri et al., 2011), and advocacy services (Almassri et al., 2011).

Almost half of the articles analysed identified the need for information to be provided to parents around the time of diagnosis (Buran et al., 2008; Palisano et al., 2009). Parents have identified that information relating to conditions and symptoms of CP (Buran et al., 2008), possible tests and treatments (Navalkar, 2004; Buran et al., 2008; Kruijsen-Terpstra et al., 2013), and educational services (Buran et al., 2008; Almassri et al., 2009; Davis et al., 2009; Palisano et al., 2009; Bourke-Taylor

et al., 2013) are extremely important during the period immediately following the diagnosis. Five of the studies analysed (26.3%) indicated that there is a need for health professionals to assist and prepare families for key developmental and transitional periods in their children's lives (Almassri et al., 2011; Buran et al., 2008; Palisano et al., 2009). Palisano and colleagues (2009) reported that many parents who have a child with CP have expressed a need to acquire information on planning for the future, and, as Almassri et al. (2011) explained, the specific information needs may vary depending on the child's age and key periods in the life of the child. Parents not only require information regarding the diagnosis of CP, but also information relating to the transition to educational pathways (Almassri et al., 2011; Rentinck et al., 2006), future employment (Almassri et al., 2011), and planning for the care of their child after the death of the parents (Buran et al., 2008).

The importance of establishing a rapport between families and service providers was identified in 36.8% of the articles analysed (seven articles). Mophosho, Widdows and Taylor-Gomez (2003), and Kruijzen-Terpstra and colleagues (2013) reported that parents often feel unsupported by services they have accessed. The development of rapport must include open communication and trust between the family and service provider (Buran et al., 2008; Kruijzen-Terpstra et al., 2013), along with the opportunity for families to collaborate and contribute towards their child's health and well-being (Palisano et al., 2009; Almassri et al., 2011; Kruijzen-Terpstra et al., 2013).

The current study revealed that service providers must identify individual and family strengths in order to work collaboratively with the family in a decision making process regarding the child with CP (Almassri et al., 2011). Maximising the child's and the family's opportunities to engage in community services and resources was also found to be important (Kruijzen-Terpstra et al., 2013). Because an individual's and family's needs change over time (Kruijzen-Terpstra et al., 2013), Schuengel and colleagues (2009) suggested that service providers demonstrate flexibility and individualisation when implementing psychoeducational support programs in order to support a parents' coping mechanisms.

The need for strong support networks for families after the diagnosis of CP was highlighted in over a third of the reviewed research (36.8%, seven articles). The studies found that immediate and extended family members, such as a spouse, mother, father and siblings, along with friends, are the most common support providers utilised by families (Pfeifer et al., 2013). Other research identified that support from family members and communities for families of children with CP assist to improve family functioning (Almassri et al., 2011; Fiss et al., 2013), parental satisfaction (Rentinck et al., 2006; Fiss et al., 2013), and emotional well-being (Davis et al., 2009; Almassri et al., 2011).

### *Proposed Practice Guidelines*

From the literature reviewed, several important factors that influence a family's adaptation after the diagnosis of a child with CP have been identified. If service providers are to develop a psychoeducational support group for families, they may consider the following guidelines derived from the literature. The focus of these guidelines is to enhance a family's functioning, decrease levels of psychological distress, and assist with establishing empowerment and control within the family system.

**Establishing rapport.** It is important that service providers identify a family's information and service needs prior to the commencement of the group program. Meeting with parents and families, which may also include the child with CP and any other additional siblings, will help establish a family-professional partnership, and assist in developing open communication and trust. During these sessions, families and service providers can collaborate and establish expectations and goals to assist with positive family adaptation.

**Providing relevant information.** Information should be relevant to the families' requested needs. Information provided should include details of what CP is, along with the varying levels of gross motor functioning capacity, treatment and tests the child may undergo, the use of equipment and aids that may be required presently or in the future, any relevant funding contributions which may be available to families, as well as information regarding the child's future, such as transitioning to education and future employment. It is important that information relating to respite care (Palisano et al., 2009), child care (Buran et al., 2008) and educational assistance (Rahi et al., 2004) be included, as this has been identified as impacting upon parental distress. During the psychoeducational sessions, service providers should discuss with families the available services they may be able to utilise, and provide them with information on support available at both state and national levels.

Parents have identified that the use of several information mediums has been effective in the presentation of psychoeducational programs. Therefore, service providers should consider incorporating written information with verbal dialogue, as well as including the use of videos, internet and role play into the sessions.

**Reducing parental distress.** Research has indicated that gaining awareness of CP can assist in providing an increased sense of empowerment and control in parents (Mitchell & Sloper, 2002; Miller, Colligan & Colvert, 2003; Jackson et al., 2007). Dixon, Adams and Lucksted (2000) suggest that service providers should ensure that an individual's and family's quality of life and family functioning are considered after the diagnosis of a child's CP, in order to allow for positive adaptation within the family. Therefore, service providers might choose to incorporate stress reduction techniques into sessions. It is believed that encouraging families to engage with community services and resources may also help to reduce levels of distress, as this assists to increase their social support networks (Davis et al., 2009).

**Who should be involved in psychoeducational groups?** Service providers should encourage all immediate and significant extended family members to engage in community support groups. Although families have reported limited numbers of social support networks in some instances (Pfeifer et al., 2013), service providers should encourage not only the immediate family, but any significant caregivers or supports to engage in community services and gain further information regarding the diagnosis of CP to assist the supported family towards a positive adaptation, and therefore increased well-being and family function.

It has been identified by Hirose and Ueda (1990) that mothers and fathers have difficulty adapting to the diagnosis in their child at different stages of the child's life, and access to services should also allow for family engagement throughout a child's key developmental periods. Literature has also suggested that siblings should

be involved because psychoeducational groups may assist siblings with their own optimal understanding of the diagnosis and foster healthy adjustment (McCulloch & Simon, 2011).

**Enhancing relationships.** Service providers should also provide information on communication and problem solving skills. CP can often produce fear within a family, which can then lead to conflict between family members. Although information can help with a family's understanding of the diagnosis of CP, learning effective communication, negotiation and problem solving skills can enable parents to constructively discuss difficult and emotional topics (Lundwall, 1996; Dixon, Adams & Lucksted, 2000). Lundwall (1996), stated that service providers should offer families tips and techniques regarding interacting with the child with CP, such as addressing violent or behavioural issues, as well as ensuring that the child and family engage and interact in play with one another (Navalker, 2004).

### **Limitations of the current study**

Much of the literature exploring parental adaptation after the diagnosis of a child with a disability primarily focuses on reports by mothers and little attention has been paid towards the role of fathers and their experiences throughout. The differences of adaptation between mothers and fathers after the diagnosis of their child were explored in only 26.3% of the reviewed articles. However, throughout the analysis it was apparent that the majority of the research population were female caregivers. Surprisingly, there was little discussion throughout the reviewed articles relating to incorporating siblings into service delivery and interventions.

A further limitation was the potential risk of bias during the data extraction, as only one researcher selected the articles from the online databases. To ensure that this bias does not occur in future research in this field, it has been suggested that researchers ensure that a cross-reference check on all extracted data is completed.

### **Conclusions and Suggestions for Future Research**

From the current research, it has been identified that there is a greater awareness for service providers to work collaboratively with parents and families who have a child diagnosed with CP in order to ensure optimum adaptation and family functioning. Therefore, the process of parental adaptation after the diagnosis of a child's CP requires further investigation, with exploration relating to how fathers and siblings adapt after a family member has been diagnosed. As the proposed guidelines in this study are the basis of future research in this area, it would also be important to determine the effectiveness of psychoeducational groups for parents and families after the diagnosis of CP.

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## Conflict of Interest

None.

## Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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