Parenting program to strengthen the self-efficacy of mothers and caregivers of children with developmental disabilities in a rural district in South Africa

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ABSTRACT

Purpose: This study investigated the change in self-efficacy and parenting stress of mothers and caregivers raising children with developmental disorders (DD) after participating in an intervention program to strengthen parents' self-efficacy.

Design/Methodology/Approach: The present study used a two-group pre-test and post-test design. Block randomization was used to assign participants who participated in the adapted confident parent program (n=11) and a control group that received routine rehabilitation services (n=8). A self-reporting questionnaire and two measure tools, the Parenting Sense of Competence Scale (PSOC) and the Parental Stress Index (PSI-SF) were completed by participants to collect baseline and post-intervention data. A statistically significant difference between the groups was analysed using the paired sample t-test. An ANOVA was used to calculate the effect of the independent variable.

Findings: The PSOC mean for the intervention group increased by 10.3 and was statistically significant (p=0.005, 95%CI: -16.97; -3.53) following the intervention program. The PSI-SF mean for the control group remained higher than that of the intervention group by 36.8 scores after the program and was statistically significant (p=0.000, 95%CI: 24.36; 49.39).

Conclusion: The findings of this study showed that the confident parent program effectively increased parenting self-efficacy in parenting a child with externalized behaviour with positive effects on parental stress for parents and caregivers raising children with DD.

Research Implication: This study highlighted the need to adopt strategies that transform practice and enhance the quality of life of parents raising children with DD. It advocates for the introduction and implementation of parenting support programs designed to strengthen parental self-efficacy.

Keywords: *Caregivers, Confident parent program, Developmental disabilities, Parent, Parental stress, Self-efficacy.*

1. INTRODUCTION

Approximately 52.9 million children younger than five years worldwide have developmental disabilities (DD) with 95% of these children living in low- and middle-income countries (LMIC) (Olusanya et al., 2018). Many children have disabled and long-term health conditions and their basic needs for optimal development, essential health and education are not optimally met (Moodley, 2021; Redfern, Westwood, & Donald, 2016; Shung-King, Lake, Sanders, & Hendricks, 2019; Vergunst et al., 2017).

Parenting in the context of DD in rural and remote areas is not fully understood (Bizzego, Lim, Schiavon, & Esposito, 2020). In South Africa, rural areas face challenges in accessing healthcare services (Ngene, Khaliq, & Moodley, 2023). Parents of children with disabilities lack essential knowledge about various aspects of their child's disability, including causes, symptoms and treatment options in LMIC particularly in the sub-Saharan region. This knowledge gap can lead to a range of adverse outcomes such as increased stress (Hastings, 2002; Mbatha & Mokwena, 2023) and anxiety, reduced ability to advocate for their children's needs within the healthcare systems and their families and ultimately their engagement within the community (Adugna, Nabbouh, Shehata, & Ghahari, 2020; Thwala, Okeke, & Dludlu, 2018). Furthermore, factors such as lack of support, feelings of incompetence and other stressors in daily life such as poverty contribute to this stress (Abidin, 1990; Beck, Hastings, Daley, &

Nurture*: Volume 18, Issue 4, 750-763,* ***2024***
Online ISSN*: 1994-1633/* ***Print ISSN****: 1994-1625*
DOI*: 10.55951/nurture.v18i4.799|* ***URL****:* www.nurture.org.pk
Publisher: *Nurture Publishing Group*

Stevenson, 2004; K Deater-Deckard, 2017; Kirby Deater-Deckard, Li, & Bell, 2016; Neece, Green, & Baker, 2012; Nota, Chikwanha, January, & Dangarembizi, 2015; Van Der Mark, Conradie, Dedding, & Broerse, 2017).

In South Africa, parents experience challenges in communicating with healthcare professionals due to language barriers and perceive their unwillingness to involve them in their children's treatment making them feel helpless and lacking the opportunity to share their knowledge and observations (Modula & Chipu, 2024; Sadiki, 2022). In a study conducted in the Sub-Saharan region, Thwala et al. (2018) found that parents often felt neglected as the services provided were primarily focused on the child's needs rather than also addressing the challenges they faced in raising their children with disabilities or equipping the parents with coping strategies. This disparity in interventions between children with disabilities and their families underscores the importance of addressing knowledge gaps among parents as crucial components in supporting families of children with disabilities.

It is essential to understand the unfulfilled support requirements of parents of disabled children to more effectively help them, enhance their psychological well-being and improve family results (Gilson et al., 2018). Hartley and Schultz (2015) emphasised the importance of parent support groups and the qualities of professionals. This study revealed that parents value support, developing partnerships with professionals, becoming educated on the child's diagnosis, obtaining individualized education plans and parent self-care.

Although the number of children with DD is rising, health services in South Africa have not shifted towards a parent-focused intervention approach. Evidence has shown that prioritizing and strengthening parenting support through targeted interventions for parents caring for children with disabilities is paramount (Susanty, Noel, Sabeh, & Jahoda, 2021). This study investigates the effectiveness of an intervention program in increasing the self-efficacy of parents or caregivers of children with DD in a rural setting. The benefit of parent-centred intervention for a parent or caregiver in a rural area with limited access to resources has yet to be explored. High self-efficacy may significantly assist parents of children with developmental disabilities in overcoming the obstacles they face in their job as parents enabling them to effectively advocate for their children's needs and fulfill their parental responsibilities (Giallo, Treyvaud, Cooklin, & Wade, 2013; Wittkowski, Garrett, Calam, & Weisberg, 2017).

1.1. Research Question

What is the effect of the parent-focused intervention program on increasing self-efficacy and reducing parental stress for parents or caregivers raising a child with DD in a rural setting?

2. LITERATURE REVIEW

In the parenting role of a child with disabilities, parenting stress and self-efficacy emerge as influential constructs that markedly shape the capacity to provide adequate care (Wittkowski et al., 2017). Parents play a crucial role in the development of their children and this role becomes even more vital in the context of childhood disability (Paul & Babu, 2018). The parent-child relationship is a foundation for the child's development and significantly influences their cognitive, social and physical well-being. However, caring for a child with DD can be extremely challenging and overwhelming for parents especially in rural communities where access to support and resources may be limited (Mbatha & Mokwena, 2023; Petrenko, 2013; Woodman, Mawdsley, & Hauser-Cram, 2015).

2.1. Self-Efficacy

Self-efficacy is a fundamental concept within the broader social cognitive theory. It refers to the individual's competence or success in a given task, their belief in their ability to accomplish a specific task or achieve a desired outcome (Bandura, 1989, 2006; Benedetto & Ingrassia, 2018; Coleman & Karraker, 2003). Parents develop beliefs about their parenting role as they care for their children (Benedetto & Ingrassia, 2018). Through self-efficacy parents then evaluate if their knowledge and efforts will be enough to raise the child. Evidence has shown that processes (mastery experience, vicarious experience, verbal persuasion or social persuasion and physiological information) shape an individual's self-efficacy belief and influence their behaviour in how they think, feel or act, therefore making self-efficacy an essential component for parents raising children with DD (Wittkowski, Dowling, & Smith, 2016; Wittkowski et al., 2017).

Nurture**: Volume 18, Issue 4, 750-763, **2024
***Online ISSN**: 1994-1633/ **Print ISSN**: 1994-1625*
***DOI**: 10.55951/nurture.v18i4.799| **URL**: www.nurture.org.pk*
***Publisher:** Nurture Publishing Group*

2.2. Parental Stress

According to Abidin (1992) *parental stress* encompasses a parent's perception of inadequate support, the child's challenging behaviour and a sense of incompetence in the parenting role. According to this definition, parental stress arises from the parent's perception of their competency and the child's behaviour. Kirby Deater-Deckard et al. (2016) provide another perspective, viewing parenting stress as a set of processes that can lead to adverse psychological and physiological reactions while adapting to parenthood. This stress affects the development of parenting self-efficacy (Abidin, 1990; Abidin, 1995; Ben-Naim, Gill, Laslo-Roth, & Einav, 2019). When parents experience high stress levels in their parenting role, they tend to exhibit less nurturing behaviour towards their children (Cherry, Gerstein, & Ciciolla, 2019; Whiteside-Mansell et al., 2007). Conversely, high self-efficacy is associated with lower levels of parenting stress indicating that when parents feel confident in managing their child's disability, they are more likely to experience reduced stress (Jones & Prinz, 2005).

Empirical research has recognised parenting behaviour as the main environmental factor associated with behavioural problems in children with developmental disorders (Dodge & Pettit, 2003; Goraya & Shamama-tus-Sabah, 2013). There is limited evidence that strongly supports this relationship between parents raising children with DD and how it affects parenting behaviour. The relationship has been established in typically developing children, whereby high parental stress is associated with parents' corporal punishment, harsh parenting practices and poor parent-child relationships (Chung, Lanier, & Wong, 2022; Jackson & Choi, 2018).

2.3. Parent-Focused Interventions

Parental interventions are essential to public health service delivery for children with DD and their families (Hohlfeld, Harty, & Engel, 2018). Literature has reported the effectiveness of parent-focused programs in enhancing parents' self-efficacy (Hohlfeld et al., 2018). There has been increasing recognition of these programs' importance in addressing families' needs (Eggenberger et al., 2016; Golfenshtein, Srulovici, & Medoff-Cooper, 2016). Programs that aim to increase self-efficacy and competence have shown positive effects on reducing parental stress (Golfenshtein et al., 2016). Previous programs have indicated that social persuasion through group-based parenting programs, particularly with parents of children with specific clinical or developmental disorders and similar economic status can positively impact parents' sense of competence and thus reduce parental stress (Barlow & Coren, 2018). Parental feeling of competence is significantly influenced by positive experiences and encouraging remarks from family members or experts (Albanese, Russo, & Geller, 2019; Mouton, Loop, Stiévenart, & Roskam, 2018; Verhage, Oosterman, & Schuengel, 2013).

3. METHODOLOGY

3.1. Research Design

This study employed a two-group pre- and post-test design to examine participants' self-efficacy and parenting stress changes between the treatment and control groups (Bonate, 2000). This design allowed the researcher to compare variable changes between the treatment and control groups. The dependent variables, self-efficacy and parenting stress were measured at two different time points. The initial measurement was taken before the intervention was implemented serving as a pre-test to establish a baseline for both groups. The second measurement was conducted after the intervention as a post-test measure.

3.2. Research Setting and Population

This study was conducted at a regional hospital, a public healthcare facility dedicated to serving women and children under the age of 12 years in the rural King Cetshwayo District (KCD) of KwaZulu Natal Province, South Africa. This regional hospital functions as a referral facility for 16 district hospitals. It's noteworthy because it has a dedicated neurodevelopmental clinic that serves more than 1500 children annually. This clinic offers follow-up services, initial medical assessments and treatments for neurodevelopmental conditions.

3.3. Sampling and Sampling Procedure

A purposive sampling method was used to identify and select participants who met the criteria ensuring that the sample was representative of the population of interest. These were mothers or caregivers who described their

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***Publisher:** Nurture Publishing Group*

children as exhibiting externalized behaviours and autism. Externalized behaviours are behavioural problems that reflect negative actions directed towards the external environment (Eisenberg et al., 2001). These behaviours encompass destructive behaviour, hyperactivity and aggression. The study participants received rehabilitation services at the study institution or district hospitals in the vicinity.

Mothers and other carers who spoke IsiZulu and were raising children who showed externalized behaviours participated in this study. Figure 1 outlines the study's sample size and group allocation. The researcher identified 31 mothers and caregivers who met the criteria from the initial study survey. Seven participants did not provide contact information; five provided incorrect contact information and could not be reached. Hence, they were excluded. Consequently, 19 participants were included in the pool for group allocation. Block randomization was used to allocate participants into either the control or intervention groups (Sedgwick, 2014). The researcher used a dedicated phone number and a short message service (SMS) invitation was sent to 14 participants who resided in the KCD inviting them to join the intervention group. Of these 14 participants, 11 responded positively to the SMS and were subsequently contacted with details regarding the group meetings. The control group comprised eight participants, five from the surrounding district community and three from the KCD who could not join the intervention group.

3.4. Instruments

Data was collected using a standardized sociodemographic questionnaire, the PSI-SF and PSOC. The PSOC is a widely used measure that evaluates parents' perceived competence in their parenting role. It assesses parents' feelings of efficacy, satisfaction and fulfilment in their parenting responsibilities (Gibaud-Wallston, 1978). The PSI-SF is a standard questionnaire that measures parental stress across various domains including parental distress, parent-child dysfunctional interactions and difficult child behaviour (Abidin, 1995). The confident parent program's structure and content were referenced in the modified intervention program. Adaptations were made to ensure its suitability for the current research population and the context of the COVID-19 pandemic. The manual of the confident parent program was used with permission obtained from the corresponding author of the confident parent program, Bénédicte Mouton.

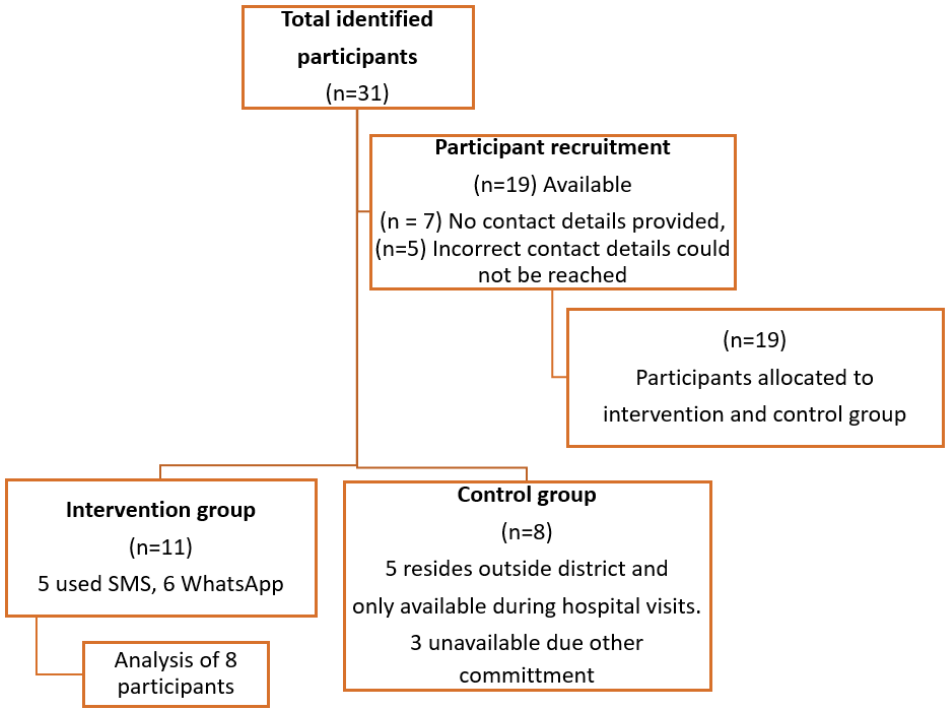

Figure 1. The allocation of participants.

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3.5. The Confident Parent Program

The confident parent program is a parenting intervention program that aims to empower parents by adjusting their parenting skills to their child's unique characteristics (Mouton et al., 2018). This program explicitly targets parents raising children with externalized behavioural problems between the ages of 2 and 12 years and focuses on developing positive parenting skills and reducing negative interactions with their children. The conception of this program is founded upon an understanding of the interdependent relationship between the child and the parent whereby both the child and parent affect each other. The confident parent program is grounded in social learning theory and cognitive behavioural therapy principles emphasizing promoting behaviour change through skill building, modelling and positive reinforcement. This program provides parents with the tools and strategies to effectively manage their child's behaviour.

The confident parent program has undergone evaluation in multiple studies. The findings indicate that it is associated with increased PSE and a reduction in parenting stress for children with disabilities (Mouton et al., 2018). Kersh, Hedvat, Hauser-Cram, and Warfield (2006) found that the program was associated with improved child behaviour and family functioning further reducing parenting stress. It is a significant resource for parents of children with disabilities providing them with the knowledge, skills and support necessary to be confident and effective in their parenting roles, thus promoting PSE and reducing parenting stress (Eltanamly et al., 2023). In this current study, the researchers have adopted the confident parent program by Mouton et al. (2018). This study aims to determine the effectiveness of this program in enhancing parental self-efficacy among mothers and caregivers in this specific context. This study aims to contribute to the understanding of how parent-focused interventions can positively influence parental self-efficacy in rural communities with children who have DD.

3.6. Program Adaptation

Program adaptation refers to how a program is modified during its adoption and implementation to address the specific needs of the target population, local circumstances and context (Chen, Reid, Parker, & Pillemer, 2013; Moore, Bumbarger, & Cooper, 2013). Program adaptation allowed for the broader inclusion of individuals involved in the caregiving role. As a result, participants were parents (mothers) or caregivers rather than strictly focusing on parents alone. Furthermore, the program's content was adapted to suit the population of the current study. Examples and strategies used were relevant and meaningful within the cultural context of the participants. Regarding program delivery, the study was conducted over two to three-hour sessions spaced one month apart deviating from the weekly session structure outlined in the program manual. The decision to modify the frequency and duration of the sessions was based on the practical considerations of the varying circumstances of the intervention group accommodating the participant's availability and logistical constraints, including COVID-19 pandemic restrictions.

This study used mobile messaging applications to facilitate communication among participants. Literature has shown that messaging applications can be valuable in data collection and promoting interactions in qualitative research (Kaufmann, Peil, & Bork-Hüffer, 2021). Mobile messaging applications offer a less intrusive and more convenient means of data collection and can provide valuable insight that can be difficult to collect through traditional methods (Alencar & Camargo, 2022; Marzi, 2023). In this current study, messaging applications such as short message services (SMS) and WhatsApp were used to facilitate communication between participants post-intervention and to schedule meeting times. Any adaptations made were communicated with the corresponding author of the confident parent program, Bénédicte Mouton to ensure transparency and alignment with the original program framework.

3.7. Data Collection

The control and intervention groups completed a self-reporting questionnaire that included demographic information and the two measurement tools, PSOC and PSI-SF before the program's implementation. These measures assessed the participants' baseline levels of parental sense of competence and parental stress. The researcher established the baseline which provided a reference for comparing the participant's self-perceived competence and stress levels before and after participating in the intervention program.

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3.8. Control Group

The control group in this study consisted of eight participants. Five were from the surrounding district community and three were from within KCD.

The control group participants were encouraged to continue attending rehabilitation services at their respective hospitals in the districts and were only reviewed by the researcher at their regional hospital appointments. Interaction between the groups especially those within KCD was minimized through the coordination of rehabilitation scheduled appointments to avoid overlap and simultaneous attendance.

3.9. Intervention Group

Eleven participants were enrolled in the intervention and subdivided into two smaller groups, one comprising six and the other five participants depending on their availability. The first group met on a Saturday morning from 10 to 1 p.m., and the second group met on a Wednesday from 9 to 12 p.m. The Saturday group convened in an open waiting area in the outpatient department which offered privacy as no services were offered on weekends in this area.

The Wednesday group used a separate room previously used for focus group discussion with minimal disturbances.

3.10. Data Analysis

A descriptive analysis was used to compare the intervention and control groups' sociodemographic characteristics and the one-sample t-test for the measure (Fuad et al., 2015). A paired t-test (inferential statistical procedure) was used to determine whether the mean change was statistically significant. The ANOVA was used to calculate the effect of the independent variable post-intervention.

3.11. Ethics Considerations

This study was part of a broader research project that aimed to strengthen the self-efficacy of parents and caregivers of children with DD.

The study underwent an ethical review process and received approval from the Sefako Makgatho Health Science University Research Ethics Committee (SMUREC) and the KwaZulu Natal Health Research and Knowledge Management Committee.

Additionally, the ethical committee of the participating hospital granted permission to conduct the study. Informed consent was obtained from all mothers and caregivers who participated in the study.

4. RESULTS

4.1. Description of Participants

4.1.1. Control group

Of the eight in the control group, three (37.5%) and five (62.5%) were from outside the district. The majority of the control group participants were biological mothers (82.5%, n=7) compared to caregivers (12.5%, n=1) aged 35 years (62.5%, n=5), single (62.5%, n=5 with a tertiary qualification (62.5%, n=5), unemployed (75%, n=6) and male children (87.5%, n=7) aged between 4-6 (62.5%, n=5).

4.1.2. Intervention Group

Eight participants in the intervention group were analysed after two were lost to follow and one was excluded at the analysis level due to a prolonged response time following the intervention. All participants had a male child. The majority were biological mothers (75%, n=6) compared to caregivers (25%, n=2), aged 35 years (75%, n=7), single (87.5%, n=7) with matriculation (62.5%, n=5), unemployed (75%, n=6), children aged between 4-6 years (75%, n=6).

4.2. Sociodemographic Comparison

Each group had a similar number of participants in the analysis. At analysis, the two groups had equal participants. The control group had the most married participants (37.5% vs. 12.5%) with tertiary qualifications (62.5% vs. 25%) (see Table 1).

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Both groups had the same number of participants: no matriculation (12%), employed (25%) and unemployed (75%).

The intervention group had only boys (100%, n=8), and only one female child was in the control group (12.5%, n=1). The participants' ages between the groups were comparable and relatively equal.

Table 1. The characteristics of mothers and caregivers in intervention and control groups.

Demographic variables		**Intervention group n(8)**	**Control group n(8)**
		n(%)	**n(%)**
Participants	Mothers	6 (75%)	7(87.5%)
	Caregivers	2(25%)	1(12.5%)
Age	≤ 35 years	6(75%)	5(62.5%)
	≥ 36 years	2(25%)	3(37.5%)
Marital status	Married	1(12.5%)	3(37.5%)
	Single	7(87.5%)	5(62.5%)
Education	No matric	1(12.5%)	1(12.5%)
	Matric	5(62.5%)	2(25%)
	Tertiary	2(25%)	5(62.5%)
Employment	Employed	2(25%)	2(25%)
	Unemployed	6(75%)	6(75%)
Child's age	4 - 6 years	6(75%)	5(62.5%)
	7- 8 years	2(25%)	3(37.5%)
Child's gender	Male	8(100%)	7(87.5%)
	Female	0(0%)	1(12.5%)

4.3. Pre-Intervention Survey

The baseline measure survey showed that 62.5% (n=5) of participants in the intervention group and 37.3% (n=3) in the control group PSI-SF scores were above the 90th percentile and were highly clinically significant stress. Furthermore, 62.5% (n=5) in the control group and 37.3% (n=3) had PSOC scores below the mean.

4.4. The One-Sample T-Test

In this study, part of a more extensive study, a single-sample t-test was conducted to compare the mean value of the intervention group to the mean values obtained in the more extensive study. The t-statistic for PSOC was 0.96 with 15 degrees of freedom. The corresponding sample p-value was 0.353, CI (61.25; 71.25) which suggests that the mean PSOC variable in this study group is similar to the mean value of 64 obtained in the larger group. Similarly, in the PSI-SF, the mean value was similar to the 116 in the more extensive study. The t-statistics of -0.97 with 15 degrees of freedom and a p-value of 0.347 CI (99.43; 122.19) suggest that there is no significant difference between the mean values of this study population and the larger study population for both the PSOC and PSI-SF variables.

4.5. Sample Normality Analysis

The histograms below *(see Figures 2 and 3)* demonstrate the distribution of dependent variables between the two groups.

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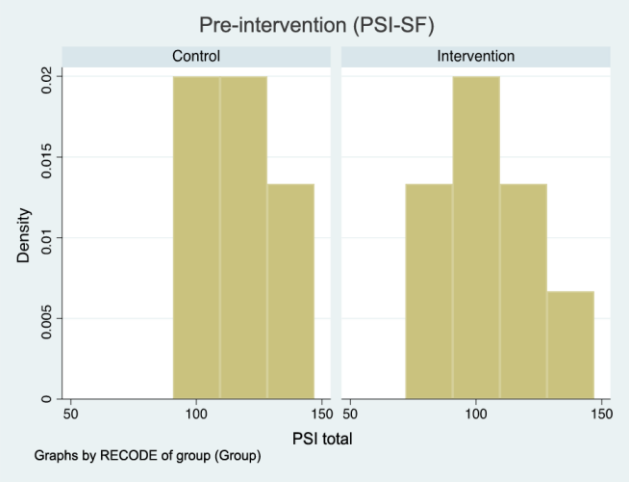
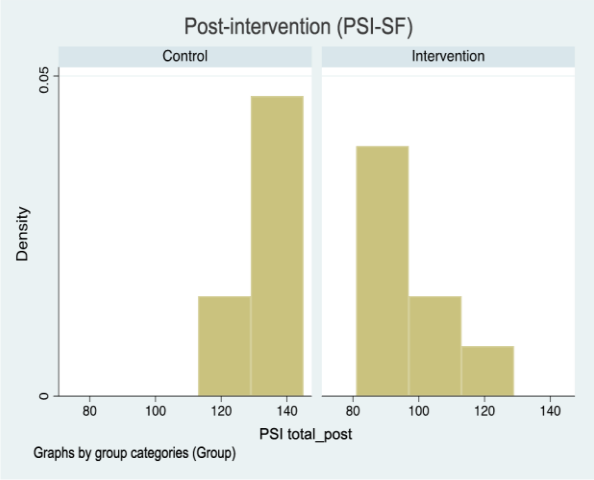


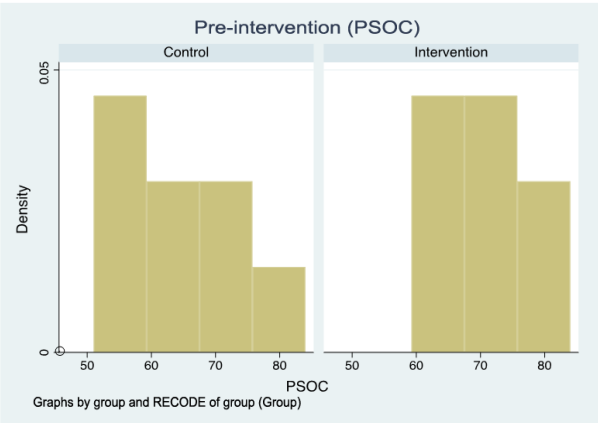


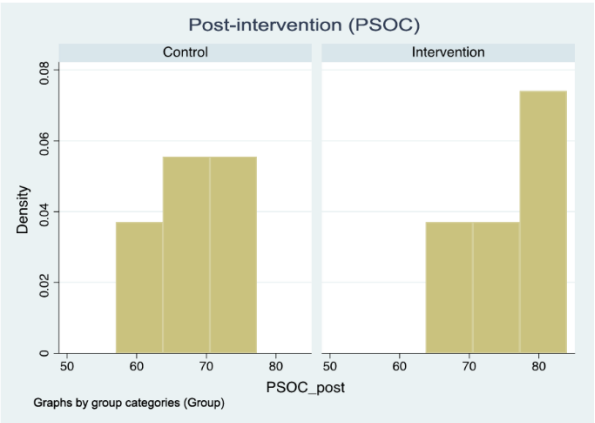
Intervention: Skewness (0.81), Kurtosis (0.25), p-value (0.46), Control: Skewness (0.85), Kurtosis (0.79) and p-value (0.94)

Intervention: Skewness (0.25), Kurtosis (0.99), p-value (0.47). Control: Skewness (0.39), Kurtosis (0.26) and p-value (0.29)

Figure 2. The PSI-SF sample normality analysis.

A normality test was conducted using the skewness-kurtosis test for the sample distribution. The skewness-kurtosis test was used to determine if the group sample was derived from a normally distributed population. A probability value greater than 0.05 indicates that the sample will likely come from a normally distributed population. Therefore, normality allowed for appropriate statistical analysis and interpretation of the results.





Intervention: Skewness (0.38), Kurtosis (0.91) and p-value (0.66).
Control group: Skewness (0.19), Kurtosis (0.40) and p-value (0.23).

Intervention group: Skewness (0.68), Kurtosis (0.09) and p-value (0.17).
Control group: Skewness (0.55), Kurtosis (0.42) and p-value (0.58).

Figure 3. The PSOC sample normality analysis.

4.6. Post-Intervention Survey

4.6.1. Presentation of an Independent T-Test

This study assessed parental stress and self-efficacy change by comparing the baseline to the post-intervention measures after implementing the adapted confident parent program. The mean difference of the measures was examined between the baseline and post-intervention periods. The t-test statistical test was used to determine if there was a significant difference. The assumption that underpins the t-test is that the data is normally distributed.

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4.6.2. Hypothesis

This analysis investigates whether there is a significant mean score difference between the intervention and control groups after implementing the adapted confident parent program using the PSI-SF and PSOC measures. The null hypothesis (*H0*) states that there is no mean difference between the two groups indicating that the intervention program did not affect parental stress or parenting self-efficacy. The alternative hypothesis (*HA*) suggests a difference between the two groups after the intervention program indicating that the program affected parental stress and parenting self-efficacy. The α was set to be 0.05.

H0: μ1= μ2.

HA: μ1¹ μ2.

4.6.3. Mean PSOC Score Difference Between Groups

A paired t-test was conducted to compare the parent competence levels before and after the adapted confident parent program intervention. The sample consisted of 16 participants (see Table 2). The mean score PSOC level before the intervention was 66.25(SD 9.39). After the intervention, it was 72.125 (SD 8.04). The paired t-test revealed a significant difference between the mean parent competence scores before and after the intervention (t (15) = (-3.314), p < 0.003). The 95% confidence interval for the mean difference was -9.44 and -2.31. These results suggest that the confident parent program intervention had a significant effect on increasing parent competence levels. The PSOC mean (SD) of the intervention group post-intervention was 77.3(6.2) and the control group 67(6.3) with a t-statistic of 3.27 and a degree of freedom of 13.9. The mean difference between the two groups was 10.3 with a 95% CI (3.351; 16.969). There was a significant mean difference between the groups. The mean for the control group was smaller than that of the intervention group by a 10.3 score after the intervention program. It was statistically significant (p=0.005, 95% CI: 3.353; 16.969) (see Table 3).

Table 2. The mean PSOC score difference.

Paired t-test							
Variables	**Obs.**	**Mean**	**Std err**	**Std. dev**	**[95% confidence Interval]**		**p-value**
Pre-test	16	66.25	2.348	9.391	61.246	71.254	0.003
Post-test	16	72.125	2.010	8.041	67.841	76.409	
T= -3.314 Degree of freedom = 15							

Table 3. The PSOC simple main effect test (ANOVA).

Unadjusted						
Post-intervention competence	**Contrast**	**Std. err.**	**t**	**P>|t|**	**[95% conf. interval]**	
Group intervention vs. control	10.25	3.132	3.27	0.006	3.531	16.969

4.6.4. Mean PSI-SF Score Difference Between the Groups

A paired t-test was also conducted to compare the parent stress levels before and after the adapted confident parent program intervention. The sample consisted of 16 participants (see Table 4). The mean PSI-SF level before the intervention was 110.8(SD 21.4). After the intervention, it was 113.2(SD 22.1). The paired t-test revealed a non-significant difference between the mean PSI-SF scores before and after the intervention (t (15) = (0.58), p < 0.573). The 95% confidence interval for the mean difference was -11.15; 6.40. The PSI-SF mean (SD) of the intervention group post-intervention was 94.8(13.5) and the control group was 131.6 (9.2), with a t-statistic of 6.4 and a degree of freedom of 12.3. The mean difference between the two groups was 36.88 with a 95% CI (-49.234 and -24.516). The mean for the control group was higher than that of the intervention group by a 36.8 score after the intervention program. It was statistically significant (p=0.000, 95% CI: -49.234 and -24.516). The results indicate that the intervention effectively decreased parents' stress levels within the intervention group (see Table 5).

Nurture**: Volume 18, Issue 4, 750-763, **2024
***Online ISSN**: 1994-1633/ **Print ISSN**: 1994-1625*
***DOI**: 10.55951/nurture.v18i4.799| **URL**: www.nurture.org.pk*
***Publisher:** Nurture Publishing Group*

Table 4. The mean PSI-SF score difference.

Paired t-test							
Variables	**Obs.**	**Mean**	**Std err**	**Std. dev**	**[95% conf. interval]**		**p-value**
Pre-test	16	110.823	5.341	21.364	99.428	122.197	0.573
Post –test	16	113.187	5.515	22.058	101.434	124.941	
T= 0.577 Degree of freedom = 15							

Table 5. The PSI-SF simple main effect test (ANOVA).

Unadjusted						
Post-intervention stress	**Contrast**	**Std. err.**	**t**	**P>|t|**	**[95% conf. interval]**	
Group intervention vs. control	-36.875	5.762	-6.40	0.000	-49.234	-24.516

5. DISCUSSION

In this study, the intervention program demonstrated an impact by significantly increasing parenting self-efficacy and reducing parenting stress among parents and caregivers of children with DD particularly those with children exhibiting externalized behaviours. The results showed that the change in parents' perceptions of their parenting abilities, vicarious experience and social persuasion facilitated by the group intervention reduced parenting stress and increased their self-efficacy. Bloomfield and Kendall (2012) found evidence supporting a relationship between higher levels of parenting self-efficacy and lower levels of parenting stress. These results suggest that when parents feel more confident in their parenting abilities, they are likely to experience lower stress levels in their parenting role.

These findings correspond with similar studies that have shown that parent-focused interventions that seek to empower parents in adjusting their parenting skills, the way they think and feel about themselves as a parent and about their child and giving them personalized positive feedback on their parenting role coming from other mothers (identity with) and an expert (significant other) can improve their parenting self-efficacy (Eltanamly et al., 2023; Mouton et al., 2018). Raising a child with DD may impact a parent's ability to create an optimal physical and social environment for the child's development. These challenges can lead to adverse psychological and physiological reactions as parents try to adapt to the demands of parenting a child with DD (K Deater-Deckard, 2017; Roubinov & Boyce, 2017).

This study contributes to the existing body of knowledge on the effectiveness of parent training interventions that increase self-efficacy and address challenges faced by parents raising children with DD (Hohlfeld et al., 2018; Moodley, 2021; Wittkowski et al., 2016). There is an immediate need for condition-specific care that supports families raising children with developmental special needs in a country where the majority of the population depends on public health services and where the number of children with disabilities who do not receive basic needs care is rising. Family and parent-focused programs play a crucial role in helping parents feel more confident in their parenting roles. Ultimately, these programs positively benefit the family, parent and child.

5.1. Future Research Implications

Due to the nature of the intervention program, only one developmental disorder was considered. Future research should consider including parents and primary caregivers (including fathers) of children with developmental disorders other than autism to determine the effectiveness of self-efficacy programs in mediating parental stress.

5.2. Practical Clinical Implications

The clinical implications of this study come from the need to adopt strategies that will transform practice and reduce the cost of caring for a child with DD. Previous research has beckoned for consideration to improve access to services for children with disabilities (Moodley, 2021). However, there is a need to focus on the quality of life for the carers. Empirical research has shown that carers of children with disabilities face challenges, stress and stigma that influence how they follow programs recommended to address their children's disability needs (Gona et al., 2016; Mbatha & Mokwena, 2023; Zuurmond et al., 2019).

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5.3. Limitations

The study sample did not include fathers who may have different perspectives on parenting competence and stress. A plan had not yet been developed for the control group to be enrolled in the programme following the second measure. However, they were encouraged to create a support group as parents.

5.4. Strengths of the Study

The focus on children with DD and their families is essential especially in a context where their basic needs are not adequately met. Strengthening parental self-efficacy in this study is identified as a crucial strategy aiming not only to empower parents in navigating the complexities of raising children with DD but also as a means to mitigate and lower the overall parenting stress experienced by mothers and caregivers. This study recognizes the profound impact of parenting stress on parents' well-being and the emergence of a compelling need to strengthen parents' self-efficacy.

6. CONCLUSION

The findings of this study underscore the importance of interventions that focus on enhancing parenting self-efficacy by addressing parents' beliefs in their capabilities to care for children with disabilities supporting them and fostering positive social interactions with their children. The conclusion of this study showed that the confident parent program successfully increased parenting self-efficacy and reduced parenting stress in parenting a child with a developmental disorder who exhibits externalized behaviour. In light of these study findings, healthcare service providers are encouraged to integrate parent-focused interventions into practice and recognize the importance of collaboration and personalized support for parents raising children with disabilities.

7. RECOMMENDATIONS

The study's findings give rise to the following recommendations:

- The introduction and implementation of targeted parental support programs specifically focused on strengthening parents' self-efficacy empowering parents with practical coping mechanisms tailored to the distinct challenges and enabling them to have the skills to navigate the complexities of caring for children with disabilities.
- The integration of mental health support services within the broader healthcare system. This recommendation emphasises the importance of incorporating mental health services, counselling and support groups into the overall healthcare framework to address the emotional well-being of parents and caregivers raising children with disabilities.

FUNDING

This research is supported by National Research Foundation through the Research Chair in Substance Abuse and Population Mental Health grant (Grant number: 115449).

INSTITUTIONAL REVIEW BOARD STATEMENT

The Ethical Committee of the Sefako Makgatho Health Sciences University South Africa has granted approval for this study on 2 September 2021 (Ref. No. SMUREC/H/200/2021:PG).

TRANSPARENCY

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

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***Publisher:** Nurture Publishing Group*

ARTICLE HISTORY
Received: 25 March 2024/ Revised: 28 June 2024/ Accepted: 17 July 2024/ Published: 9 August 2024

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Nurture**: Volume 18, Issue 4, 750-763, **2024
***Online ISSN**: 1994-1633/ **Print ISSN**: 1994-1625*
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