Evaluation of a Pyramidal Parent Training Model in Albania

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Original article

Abstract

Introduction: Parenting a child with a disability presents a challenge for parents worldwide. In countries that have limited resources, the challenges of raising a child with autism can be overwhelming. Parent training is one method of providing services to parents and models that account for the realities in developing countries are needed.

Method: 20 parents of children with autism were trained on three intervention strategies (prompting eye contact, redirecting repetitive behaviours, and providing contingent praise). The study used a quasi-experimental design with three pretest conditions and three posttest conditions. The parents were randomly assigned to a training tier where they were trained by either a professional or another parent.

Results: Significant changes on the pre-post measures were found. Parents indicated that this training strategy was aligned with their cultural values and that they believed the goals and outcomes of the training were effective.

Conclusion: Pyramidal training represents a training method to help disseminate behavioural interventions to parents in countries with limited resources.

Keywords: parent training, autism, Albania


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1. Introduction

Raising a child with autism presents an intimidating set of challenges for parents worldwide, challenges which are further intensified for families who live in poverty. Although the impacts of childhood disabilities can be ameliorated through educational, therapeutic, social, and medical systems in highly developed nations, these institutions are significantly weaker in low-income countries, causing parents and families to struggle with increased challenges. Limited access to financial and professional resources can result in employment barriers, social stigma, and feelings of isolation for those who care for an individual with a disability. Large-scale population studies on poverty in developing countries indicate that poverty is both a cause and a result of intellectual and developmental disabilities (IDD; Emerson, 2007; Fujiura et al., 2005). Interventions designed to support families could potentially break down this bidirectional relationship in developing areas of the world.

Albania, a developing country located in Southeast Europe, has been emerging since the early 1990s from nearly 50 years of communist rule and isolation. Despite a population of more than three million, Albania’s system support for individuals with disabilities has been severely limited. The number of children with disabilities in Albania is estimated to be between 17,786 and 24,000 (Cuko et al., 2012; Radoman et al., 2006). Earlier studies indicated that 5.86 in 1000 youth under the age of 18 have significant disabilities such as cerebral palsy or intellectual disabilities (Palmobi et al., 1996).

In Albania, families that have children with autism and related disabilities are more likely to live in poverty (Merkaj et al., 2013) and experience more stress, anxiety, and depression (Emerson, 2007; Fujiura et al., 2005) than families without children with IDD. The concept of disability is not well understood or widely discussed among Albanians (Murillo, 2014), yet survey research indicates that attitudes toward individuals with disabilities are generally positive among the youth (Dibra et al., 2013; Radoman et al., 2006).

1.1 Educational Services Available for Individuals with Disabilities

Special education services in Albania are typically provided by teachers who are not trained on teaching techniques specific to children with disabilities (Duraku et al., 2021; Radoman et al., 2006). Children with autism rarely receive educational services in the general education classroom (Duka & Tati, 2012; Duraku et al., 2021; Radoman et al., 2006). Even though the number of children participating in public special education programs has increased in recent years, fewer than 50% of children with disabilities in Albania receive services from public schools (Cuko et al., 2012; Duka & Tati, 2012).

School psychologists frequently work with children with autism and their parents, but there are significantly fewer school psychologists in Albania than in the United States and countries in Western Europe. The current ratio of students to school psychologists in the United States is approximately 1,233 to 1 (Goforth et al., 2021), whereas there are between 5,995 to 8,992 school-aged children for each school psychologist in Albania according to Jimerson et al. (2009).

Behaviour therapies for individuals with autism are limited in Albania (Tomori et al., 2013; Dai et al., 2018). It has been hypothesized that parent training in Albania would help meet the behavioural needs of children with autism spectrum disorder (ASD) and their families (Wallace et al., 2012). Although the services of non-governmental organizations are a primary source of help for children with developmental disabilities in Albania (Radoman et al., 2006), variable funding patterns create gaps in services that frequently go unresolved (Tomori et al., 2013). These limitations in professional and economic resources in Albania create a need for a more sustainable system to disseminate services for individuals with disabilities. Tomori and colleagues (2012) have argued that “the approaches to the delivery of evidence-based treatments for child mental disorders would need to take a very different strategy to the specialist-led model adopted by well-resourced countries” (p. 221). One possible alternative would be for parents of children with disabilities to train other parents on evidence-based interventions (Kuhn et al., 2003; Neef, 1995). These training models are referred to as “pyramidal trainings.”

1.2 Pyramidal Training

Pyramidal training models are a research-based training method by which one individual, usually a professional, teaches others how to implement a behavior intervention, and those who have learned this intervention teach it to others. Several studies have applied pyramidal training in teaching parents of children with disabilities a variety of skills. Neef (1995) compared two training approaches—a pyramidal approach and a traditional therapist training approach—for training parents of children with disabilities on teaching their children academic skills. In the pyramidal condition, the professional therapist trained parents, who trained other parents, who in turn trained other parents. In the therapist training condition, the therapist trained parents directly on the programs. Results indicated that there was no significant difference between the pyramidal and therapist conditions in terms of acquisition, maintenance, or generalization of instructional skills. In a similar study, Kuhn et al. (2003) extended the pyramidal approach to teach parents interventions for challenging behaviour. Results indicated that parents could effectively train other parents and caregivers on the interventions and that those they trained could train other caregivers without significant deterioration of the information or process. These studies demonstrate that academic,
behaviour, and language interventions can be disseminated effectively through parent trainers. More recently, a review of parent-to-parent support models found that 25 studies supported the use of parents as trainers for other parents (Lee et al., 2023). The studies reviewed showed that a total 141 mentor parents trained a total of 747 mentee parents. Therefore, the value of such a model would be useful in countries like Albania where there are concerns about resources for children with autism. In neighbouring Macedonia, Hansen and colleagues (2017) led a training of 17 parents where approximately half of the parents served as trainers for the other parents. Similarly, Lee and colleagues (2022) conducted a study in Mongolia that showed four parent mentors could effectively coach five parents on various behavioural strategies. The cost effectiveness of such a model is apparent. ABA-based treatments for individuals with developmental disabilities can be time intensive and costly (Jacobson et al., 1998). In addition to the economic benefits of pyramidal training, parents’ training of other parents fits the cultural context of Albania, where the social value of mikpritja (hospitality) has a long history as a social practice (Sadiku, 2014; Tarifa, 2008) and is represented in Albanian oral law and tradition as the Kanun of Lekë Dukagjini. Sadiku (2014) pointed out that “the concept of hospitality according to the Kanun represents an institution ruling Albania’s social sphere. The concept goes far beyond traditions and customs and it is deeply connected with the honorable conduct to which every Albanian should adhere” (p. 104). Hospitality in Albania is characterized by welcoming strangers into one’s home as one would welcome friends. Thus, parents training other parents in their own homes would be a culturally compatible way to disseminate services in a support network. To date, no studies in Albania have demonstrated the effectiveness of pyramidal approaches to teaching parents with the purpose of disseminating behavioural intervention practices for less cost and in alignment with cultural values. To accomplish the purpose of evaluating pyramidal training, three strategies, namely to contingent praise (Polick et al., 2012), prompting eye contact (Cook et al., 2017), and redirecting repetitive behaviours (Gould et al., 2019) were used as examples of basic strategies that could be expanded in comprehensive trainings. The present study evaluated the following question: What are the effects of pyramidal training on the ability of Albanian parents of children with autism to implement three behavioural strategies?

2. Method
2.1 Participants
Staff at a regional autism treatment centre in Southern Albania notified potential participants in person, by telephone, via social media, and through email. To be included in the study, parents had to have a child with autism aged 12 years or younger. In addition, parents had to live within the geographic area where the study took place. Parents who expressed interest in participating were provided information regarding the study time and location. In all, 28 parents expressed interest in participating. Of those, four did not qualify according to the inclusion criteria because their children did not have autism and because one did not live within the geographic area. Although 24 parents participated in the training, only 20 were included in this analysis due to missing pre-test (n = 2) or post-test (n = 2) scores. Of the parents who completed the study, 70% (n = 14) were female with an average age of 36.8 (SD = 11.5), and 30% were male (n = 6) with an average age of 37.3 (SD = 9.9). The highest level of educational attainment of the parents is broken down as follows: eight years of primary school for 35% of the total sample (female n = 4, male n = 3), secondary school for 45% of the total sample (female n = 7, male n = 2), and four year university for 20% of the total sample (female n = 3, male n = 1). 65% of participants came from a large town (43,000 inhabitants), 25% from a smaller town (4,000 inhabitants), and 10% from two rural towns (fewer than 2,000 inhabitants) served by the centre. All participants were parents of children (27.3% female; n = 6) diagnosed with ASD; their children’s average age was 7.4 (SD = 2.7). Although the region includes a significant number of ethnic Greek and Roma minorities, all participants self-identified as ethnic Albanians. Figure 1 shows a flowchart for the training model used in the present study. Training occurred in a four-level format where parents were trained by a therapist (Level 1) or by another parent (Levels 2-3). There were three therapists total and parents were randomly assigned to a group of eight other parents led by a therapist. In addition, parents were randomly assigned to one of the four training levels. Research staff explained the roles of trainer parents and trainee parents to the participants. Therapists taught the trainer parents to provide a training script, read through a training script, then model the strategy for the trainee, and practice with the trainee until the trainee could demonstrate the strategy independently.
2.1.1 Therapists
Three therapists employed at the autism center delivered training to five parents at Level 1. All three were Albanian females in their mid-20s who held bachelor’s level degrees in speech-language pathology and all had more than two years of experience in educational intervention for children with ASD in clinical settings.

2.1.2 Trainer parents.
At Levels 2-4, one parent who had received training on the three strategies trained two parents from the next level on those strategies. Parents were randomly assigned to trainer parents and trainee parents. Parents who would become trainers were informed of their status before the training sessions and thereafter were designated as future trainers by a star placed next to the number on their nametag. No parent trainers were designated at Level 4 since there would not be a Level 5. In all, nine trainer parents participated at Levels 1-3.

2.1.3 Trainee parents
In addition to trainer parents, trainee parents were designated at each level to participate only by being trained. Parent trainees were also informed of their status before the training sessions. In all, 11 trainee parents participated at Levels 1-4.

2.2 Setting
The study was conducted in a large room adjacent to a clinic building. The room was approximately 130 square meters with capacity for approximately 100 people; it contained tables and chairs for all of the participants. Three tables were designated for training, and trainers and trainees separated themselves from the group while training to limit distractions for those involved in the training. Simulation assessments were spaced 5 meters apart and conducted 6 meters away from waiting participants.

2.3 Measures
2.3.1 Acquisition measures
Prior to and following each training session, the parents were evaluated on three behavioral strategies: providing verbal praise, eliciting eye contact, and redirecting repetitive behavior. Behavioral strategies were demonstrated in three different simulations in which the observers presented a scenario, providing opportunities for the parents to utilize the strategies they were taught during training. Measures were conducted in the Albanian language.

A paper and pencil form was used to record identification numbers, a checklist of the strategy steps, and a statement of whether the session was pre- or post-training. A script was used to guide the assessment, and the evaluators had a data recording sheet and pencil at each table. Each strategy that was assessed during the simulation assessments included four to five steps, which the evaluators recorded as they observed. Scores were recorded on a checklist. Steps for each strategy are found on Table 1.

2.3.2 Evaluators
The acquisition measures described above were conducted by three observers (two females and one male) who were proficient in the Albanian language, having lived in Albania or Kosovo, where Albanian is the dominant language, for a minimum of 16 months. The two female observers were undergraduate students studying nursing and international studies, and the male observer was a professor and behavior analyst.
Table 1: Steps used to evaluate behaviour strategy acquisition

<table>
<thead>
<tr>
<th>Steps for verbal praise:</th>
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<tbody>
<tr>
<td>1. Parent looks at evaluator.</td>
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<tr>
<td>2. Parent says a positive statement.</td>
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<tr>
<td>3. Parent uses an enthusiastic tone.</td>
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<td>4. Parent shows a pleasant facial expression.</td>
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<table>
<thead>
<tr>
<th>Steps for eliciting eye contact:</th>
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</thead>
<tbody>
<tr>
<td>1. After the evaluator’s request, parent waits 5 seconds for evaluator to provide eye contact.</td>
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<tr>
<td>2. Parent prompts eye contact.</td>
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<tr>
<td>3. Parent provides item contingent upon eye contact.</td>
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<tr>
<td>4. Parent praises eye contact.</td>
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</table>

<table>
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<tr>
<th>Steps for redirecting repetitive behaviour:</th>
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</thead>
<tbody>
<tr>
<td>1. Parent provides a verbal direction to the motor task.</td>
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<tr>
<td>2. Parent models the motor task.</td>
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<tr>
<td>3. Parent provides a second verbal direction to the motor task.</td>
</tr>
<tr>
<td>4. Parent uses a guided prompt to the motor task.</td>
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<tr>
<td>5. Parent praises engagement in the motor task.</td>
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</table>

2.3.3 Social validity questionnaire
The parents were given a nine-item questionnaire after the training. They ranked questions on a 5-point scale (1 disagree, 2 somewhat disagree, 3 neutral, 4 somewhat agree, 5 agree). Parents rated each item by checking the box that indicated their level of agreement with the statement. This questionnaire was able to evaluate participants’ perspectives on the training, the trainers, and alignment with Albanian cultural values and norms.

2.4 Training Materials
Assessment materials were recorded in a paper and pencil format. At the beginning of the training, trainers (therapists on Level 1 and parents on Levels 2 through 4) received training scripts that included a rationale for the strategy, steps of the strategy, and guidance for modeling and practicing the strategy. Each of the simulation assessments required the use of a toy. Smart phones were used to record all video data to be uploaded to an offsite server.

2.5 Procedures
Refer to Figure 1 for a flowchart that shows the training model. Training occurred in a pyramidal format as shown on Figure 1. Training was provided in the Albanian language. Each parent received a nametag with a unique identification number that had been randomly assigned. Trainers had a star-shaped sticker placed beside their number. After parents had been randomized to the trainer or trainee positions and groups were evenly distributed, the training began with the therapists training the two parents who had been assigned the lowest numbers. After therapists finished training at Level 1, trainers were given as much time as they needed to train at Level 2. Parent trainers trained on Levels 2-4 thereafter. This arrangement was replicated for each of the three strategies described below.

The pyramidal training taught parents each strategy using a behavioural skills training approach—providing instructions, modelling, and arranging practice and feedback—as previously used in other parent training studies. At the beginning of the study, trainers and trainees were given a training script that included a rationale for the use of the strategy, specific steps for demonstrating the strategy, guidance for modeling the strategy, directions for practice within the training, and alignment with Albanian cultural values and norms.

2.5.1 Strategies used in training
Three behavioural strategies were selected to evaluate the effectiveness of the training. The first strategy taught during the training was giving verbal praise, a strategy frequently recommended in behaviour programs for individuals with ASD. Trainers were directed to practice by placing an item on the floor and asking the parent to role play by telling them to pick up the item. Parents completed training when they demonstrated the four steps included in the strategy. The second strategy was prompting eye contact while their child was making a verbal request.
The practice and assessment scenarios presented a situation in which the parent could wait for eye contact as the trainer and evaluator provided a toy and requested it without eye contact. The objective was achieved through completing the strategy steps: to wait for eye contact before providing the item. It should be noted that teaching eye contact is controversial among autism advocates and the importance of teaching eye contact is contested. In the present study, the purpose of this strategy was to enhance the social nature of requesting items, and providing eye contact is recognized as a precursor skill for social communication (Hustyi et al., 2023). The third strategy taught during the training sessions was redirecting repetitive behaviour. As a repetitive and restricted interests constitute a core component of ASD, methods of reducing them could prove useful for parents. One research-based method of reducing repetitive motor behaviours is to interrupt the behaviour and redirect it to a competing response (Boyd et al., 2012). Training was completed when parents could demonstrate the behavioural strategies at 75% accuracy.

2.6 Assessment fidelity

To ensure that assessments were conducted with fidelity, the on-site assessors and a second observer who coded the videos used a checklist to ensure assessment fidelity. A total of 40% of all pre-assessment and 40% of all post-assessment videos were coded by the second observer to evaluate agreement. The following items were scored based on the parents’ performance: (a) the scenario was presented to the participant, (b) the participant was attentive, (c) the prompts were withheld, and (d) praise was not given for completing steps. When a step was completed, the observer marked a + symbol; if the step was skipped or demonstrated incorrectly, he or she marked a - symbol. The assessment fidelity checklist was summarized by dividing the number of steps completed by four and multiplying the resulting number by 100, resulting in a percentage of steps completed. At Level 1, the therapists provided training at 86.7% fidelity; at Level 2, parents provided training at 77.8% fidelity; at Level 3, parents provided training at 91.1% fidelity; and at Level 4, parents provided training at 77.1% fidelity. Overall, training occurred at 83.5% across all levels and training groups.

2.8 Interobserver agreement

Assessments were completed at the study site. The evaluator recorded data for all participants during the role play assessment, and a second observer scored 51.7% of sessions from videos. This observer utilized the same assessment as the evaluator and marked a + when the parent demonstrated the strategy step (see Table 1) and a - when the parent did not. Agreement was calculated by dividing the lowest score obtained by the on-site assessor and the video coder by the highest score obtained and multiplying the dividend by 100, resulting in the percentage of agreement on the items. The average interobserver agreement was 95.5%, with a range of 75% to 100%.

2.9 Research Design and Analysis

A single group quasi-experimental design was used to evaluate the effects of the training. Each strategy was assessed before and after each training session. Participants were randomly assigned to training Levels 1 through 4. Data were aggregated in a pre-test/post-test arrangement and analyzed using a paired-sample t-test. Social validity questionnaires were summarized with means and standard deviations for each response.

3. Results

3.1 Effects of Training on Parents’ Acquisition of Strategies

3.1.1 Verbal praise (VP)

The paired samples t-test indicated a difference in aggregated scores from pre-testing (M = 43.0, SD = 38.2) to post-testing (M = 92.5, SD = 16.4); t(19) = -6.25, p = 0.001; d = 1.68. Of the participants, 75% (n = 15) demonstrated increases in praise from pre- to post-testing. The other 25% (n = 5) of parents demonstrated the strategy at 100% accuracy at pre-test.

3.1.2 Eliciting eye contact (EEC)

The results of a paired samples t-test showed a difference in aggregated scores from pre-testing (M = 33.8, SD = 39.9) to post-testing (M = 82.5, SD = 30.5); t(19) = -4.51, p = 0.001, d = 1.37. Increases in EEC from pre- to post-testing were found for 70% (n = 14) of the parents. Additionally, 15% (n = 3) of parents demonstrated the strategy at 100% accuracy at pre-test and post-test. However, 5% (n = 1) of parents did not improve from pre- to post-testing, and 10% (n = 2) of parents decreased from pre- to post-testing.
3.1.3 Redirecting repetitive behavior (RRB)
A difference was found by a paired samples t-test in aggregated scores from pre-testing ($M = 28.0, SD = 30.0$) to post-testing ($M = 88.0, SD = 20.9$); $t(19) = -10.76, p = 0.001, d = 2.32$. A full 100% ($n = 20$) of participants demonstrated increases in RRB.

3.2 Social Validity
The social validity questionnaire is included on Table 2.

Overall, parents responded very favourably to the intervention on all items. Notably, parents were positive in assessing alignment with cultural values; they noted that learning strategies from another parent was consistent with their values and that welcoming other parents into their homes fit with their definition of hospitality (Items 7-8).

Fig. 2. Aggregated pre-post simulation assessment data. Error bars represent standard error of the mean.

4. Discussion
The purpose of this research was to evaluate the efficacy of pyramidal training relative to cultural values in Albania. Findings indicated that the majority of parents of children with ASD were able to demonstrate the use of three behaviour support strategies learned from therapists or from other parents.

Significant increases were noted across all three strategies. Parents considered the parent trainings to be socially valid as indicated by the questionnaire presented on Table 2. The majority of parents considered the intervention consistent with their values and with their definition of hospitality, which, as previously mentioned, is a cultural pillar in Albania.

Table 2: Parent Social Validity Questionnaire (back translated by first author)

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean (SD)</th>
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<tbody>
<tr>
<td>1. Providing eye contact is important.</td>
<td>4.83 (0.64)</td>
</tr>
<tr>
<td>2. Praising positive behaviours is a good way to increase behaviours.</td>
<td>4.96 (0.21)</td>
</tr>
<tr>
<td>3. Decreasing repetitive behaviours of children with disabilities is important.</td>
<td>5.00 (0.00)</td>
</tr>
<tr>
<td>4. I trust the person who taught me the three strategies.</td>
<td>5.00 (0.00)</td>
</tr>
<tr>
<td>5. I would be willing to teach these strategies to other people in their homes</td>
<td>5.00 (0.00)</td>
</tr>
<tr>
<td>6. I would let somebody come to my home to tell me how to help my child with behaviour</td>
<td>4.83 (0.82)</td>
</tr>
<tr>
<td>7. Learning strategies from another parent is something that aligns with my values</td>
<td>4.88 (0.61)</td>
</tr>
<tr>
<td>8. Welcoming other parents into my home fits my definition of hospitality</td>
<td>4.95 (0.20)</td>
</tr>
<tr>
<td>9. In the future, I will use the three strategies I learned</td>
<td>5.00 (0.00)</td>
</tr>
</tbody>
</table>

Note. Ratings: 1=Disagree, 2=Somewhat Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree.
4.1 Limitations and Future Research
Although a large percentage of parents demonstrated the use of all three strategies taught using this approach, several limitations to the study should be considered. The design was limited by not including a control group; thus evaluating the results and drawing inferences from the findings should be approached with caution. Additionally, the measures did not involve observations of the parents with their children; therefore, generalization of the recorded effects to the parents’ home setting or to their children’s specific behaviours could not be observed. Given these limitations the current study should be considered a preliminary analysis of the training model, rather than a comprehensive parent training program.

Future research should further evaluate parent training in countries with limitations in professional and financial resources. The three strategies utilized in the present study were chosen to evaluate the training model. Comprehensive sets of strategies over a longer period of time would be needed to enhance parent training in countries like Albania. Although the strategies used in the present study were selected to demonstrate the effectiveness of a pyramidal training model, future research should involve individuals with autism to assist in the selection of these strategies (Leaf et al., 2022).

5. Conclusion
In summary, the pyramidal approach to parent training increased parents’ ability to use the three behaviour strategies. The study also demonstrated that parents would be willing and eager to implement training in other parents’ homes. In a cultural context such as Albania, which emphasizes hospitality as a social value, social networks have the potential to improve the dissemination of research-based practices, which is inadequate due to limited professional and financial resources for supporting intensive interventions. Such a network would be sustainable and efficient.

Ethical Approval
This study has been approved by the institutional review board, human subjects committee (university blinded).

Conflict of Interest
All the authors declare that they have no conflicts of interest.

6. References
https://jhrs.almamater.si/


