How Child's Autism Spectrum Disorder Shakes Mother's Equilibrium

Or

Coping and Post-traumatic Growth in Mothers of Children with ASD

Georgia vs. United States

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როგორ არღვევს ბავშვის აუტისტური სპექტრის აშლილობა დედის ექვილიბრიუმს ანუ დაძლევის სტრატეგიები და პოსტტრავმული ზრდა აუტისტური სპექტრის მქონე ბავშვების დედებთან: საქართველოსა ამერიკის შეერთებული შტატების შედარება

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"I go to this dark place once a month. Child's condition is stable but I am still in this dark place. And no one is able to help," Georgian mother of a 3–year-old boy with ASD says.

Abstract

Parents of children with autism spectrum disorder (ASD) undergo increased levels of stress. It is important to understand the experiences the mothers of children with ASD go through, to examine coping strategies they use, if these strategies are in relation to post-traumatic growth, to highlight the possible important factors facilitating post-traumatic growth and to change the perspective on child's condition and use these factors as a helping tool while future interventions. 23 mothers of children with ASD from Georgia (Georgian mothers), 20 mothers of children with ASD from the United States (American mothers) and 20 mothers of children without developmental disorder from Georgia(Control group) participated in the research. Post-traumatic Growth Inventory (PTGI) by Tedeschi and Calhoun was used to measure post-traumatic growth in mothers, Coping Response Inventory (CRI) by Rudolf Moos was used to measure their coping styles and strategies.American mothers were observed to be engaged in avoidant coping more than the Georgian mothers, namely, they used coping strategies like acceptance of resignation, seeking alternative reward, emotional discharge. Georgian mothers were observed to use cognitive behavioral approach strategy more than the American mothers or the control group did. Significant difference on post-traumatic growth was identified between the American mothers and the control group. Even though we discovered significant difference between the groups for posttraumatic growth, we only observed this difference between control group and American mothers. Correlation analysis identified the link between approach coping strategy and post-traumatic growth. Furthermore, linear regression indicated that approach coping strategy and group belonging (Georgian, American, control group) are independent predictors of post-traumatic growth. Approach coping strategy may be considered as a variable significantly contributing to post-traumatic growth, reappraisal of a child's condition and possible key tomother's psychological well-being.

Keywords: mothers of children with ASD, post-traumatic growth, coping.

„თვეში ერთხელ რაღაც ბნელ ადგილას ვხვდები. ბავშვი სტაბილურადაა, მაგრამ მე მაინც ამ სიბნელეში ვარ. ვერავინ მეხმარება.“ – აუტისტური სპექტრის მქონე 3 წლის ბიჭის დედა საქართველოდან.

აბსტრაქტი

აუტისტური სპექტრის მქონე ბავშვების მშობლები განსაკუთრებით დიდ სტრესს განიცდიან. იმისთვის, რომ გავიგოთ რას გრძნობენ და რისი გადალახვა უწევთ აუტისტური სპექტის მქონე ბავშვების დედებს, მნიშვნელოვანია ვიკვლიოთ, რომელ დაძლევის სტრატეგიებს იყენებენ და არის თუ არა ეს დაძლევის სტრატეგიები კავშირში პოსტტრავმულ ზრდასთან. განსაზღვროთ ის ფაქტორები, რომელიც ხელს უწყობს პოსტტრავმულ ზრდასა და ბავშვის მდგომარეობაზე შეხედულების შეცვლას და მოცემული ფაქტორები სამომავლო ინტერვენციის პროცესებში გამოვიყენოთ. კვლევაში მონაწილეობას იღებდა 23 აუტისტური სპექტრის მქონე ბავშვის დედა საქართველოდან (ქართველი დედები), 20 აუტისტური სპექტრის მქონე ბავშვის დედა ამერიკიდან და 20 ტიპური განვითარების მქონე ბავშვის დედა საქართველოდან (საკონტროლო ჯგუფი). კვლევაში პოსტტრავმული ზრდის შესაფასებლად გამოყენებულია ტედესკისა და კალჰოუნის (Tedeschi & Calhoun) პოსტრავმულიზრდის კითხვარი (PTG), ხოლოდ სტრესის დაძლევის სტილისა და სტრატეგიების შესაფასებლად - რუდოლფ მუსის (Rudolf Moos) დაძლევის პასუხის კითხვარი (CRI). ქართველ დედებთან შედარებით ამერიკელი დედები უფრო მეტად იყენებდნენ ამრიდებლურ დაძლევის სტრატეგიებს, როგორიცაა მიღებაანუარყოფა, ალტერნატიულიჯილდოსძიება და ემოციურიგანტვირთვა. ამერიკელ და საკონტორლო ჯგუფის დედებთან შედარებით ქართველი დედები უფრო მეტად კოგნიტურ და ქცევით მიახლოებით სტატეგიებს იყენებდნენ. დედების ჯგუფები ერთმანეთისგან პოსტტრავმული ზრდის მაჩვენებლით განსხვავდებოდნენ, თუმცა სტატისტიკურად მნიშვნელოვანი განსხვავება მხოლოდ საკონტროლო ჯგუფსა და ამერიკელ დედებს შორის დაფიქსირდა. კორელაციურმა ანალიზმა გამოავლინა კავშირი მიახლოებით დაძლევის სტრატეგიასა და პოსტტრავმულ ზრდას შორის. გარდა ამისა, წრფივმა რეგრესიულმა ანალიზმა გამოავლინა, რომ მიახლოებითი დაძლევის სტრატეგია, ჯგუფთან მიკუთვნებულობასთან ერთად (ქართველი, ამერიკელი, საკოტროლო), პოსტტრავმული ზრდის დამოუკიდებელი პრედიქტორია. მიღებული შედგების მიხედვით, პოსტტრავმული ზრდისთვის ხელშემწყობ მნიშვნელოვან ცვლადად მიახლოებითი დაძლევის სტრატეგია შეგვიძლია მივიჩნიოთ.

საკვანძო სიტყვები: აუტისტური სპექტის აშლილობის მქონე ბავშვების დედები, პორტტრავმული ზრდა, სტრესის დაძლევა.

Definition of the terms

Stress

After coining the term “stress”, Hans Selye started to envelop a number of events thatmay be stressful for a person. Stress is defined as a dynamic process involving “the thoughts and behaviors used to manage the internal and external demands of situations that are appraised as stressful”(Lazarus & Folkman, 1984).

Most widely used definition of stress was proposed by Lazarus and Folkman. They state the stress is triggered by “external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984).

Coping

Most widely accepted theory in coping is defined by Lazarus and Folkman. Their cognitive appraisal theory of stress describes copingas a dynamic process. Coping is a person’s cognitive and behavioral attempt to adapt to specific external and/or internal requirements that are assessed as ones exceeding the individual's existing resources (Folkman, Lazarus, & al, 1986). Lazarus and Folkmanhighlighttwo central processes: cognitive appraisal and coping. On three different levels of stress appraisal a person assesses the impact of the stress, determines his/her reaction and evaluates the efficiency of the taken action. According to the cognitive theory, coping has two functions. During the problem-focused function the situation causing the stress is directly changed. Emotion-focused function refers to the reduction and regulation of the negative emotions associated with the stress (Lazarus & Folkman, 1984).

Conceptualized model of stress along withthe coping process modeldeveloped by Rudolf Moos is based on the cognitive theory of stress by Lazarus and Folkman, but Moos has considered a wide variety of issues significantly contributing to adapting to a new situation. This extensive selection of issues combines a person together with his/her personal characteristics and the well-being,the environment the person is surrounded by, the stressor itself andthe process of appraisal of the stressor. There is a bidirectional relation between each variable within the integrated framework. According to Moos, coping strategies have a mediation role between the life crisis and the well-being of a person experiencing a life crisis (Moos R. H., 1995).

Post-traumatic growth

Many pieces of evidence confirm that traumatic events result a variety of negative physical and psychological outcomes.Less attention is paid to positive effects of negative events(Tedeschi & Calhoun, 1996).

According to the transformational theory by Tedeschi and Calhoun, post-traumatic growth is a positive change following the greatest crisis of life (Tedeschi & Calhoun, 2004). Post-traumatic growth has five aspects to reflect on, such as(Tedeschi & Calhoun, 1996):

- Appreciation of life;
- Relationships with others;
- New possibilities in life;
- Personal strength;
- Spiritual change;

Transformational model by Tedeschi and Calhoun's describes post-traumatic growth as a positive change occurring after overcoming life crisis (Tedeschi & Calhoun, 2004).

Autism Spectrum disorder

Autism spectrum disorder is a neurobehavioral condition which can manifest as a persistent deficits in social communication and social interaction across context and situations; restricted, repetitive patterns of behavior, interests or activities.Symptoms of ASD appear early in development (American Psychiatric Association, 2013).

Background

"Unforeseen perks" of being a parent

Only recently researchers started to consider having a child and becoming a parent as a stressful event. Generally, parenting is accompanied by dramatic changes in lifestyle and overwhelming responsibilities related to a newborn. It is not surprising that due to sleepless nights, personal struggle to find time for oneself, interpersonal difficulties to find time for a partner/friends and the lack of balance between work and newly established lifestyle many parents experience parental stress and even burnout(Hubert & Aujoulat, 2018). Although all couples try to adjust to dramatic changes in life, some of them perform more effectively than others do. Considering these circumstances, parents/couples may differ in experiencing stress.

It is commonly known that the parents/caregivers of children with developmental and chronic medicalconditions face high levels of stress (Cousino & Hazen, 2013). Even the fact of discovering a child's problem may be traumatic to a parent, not to say anything about parents dealing with financial problems or perceived stigma, fighting for an inclusive classroom,

ensuring to involve a child in an expensive intervention programs and etc. (seeSoltanifar, et al., 2015; Padden& James, 2017; Bashir, Khurshid, &Qadri, 2014;Allen, Bowles, & Weber, 2013).

Parents of children with ASD encounter the same challenges; they also have to deal with the highlighted issues and their mental state is getting more prone to the increased levels of stress day by day (see Duarte, Bordin, Yazigi, & Mooney, 2005). The first period of discovering the diagnosis of ASD can be especially traumatic for a parent. Each family member copes with the diagnosis of ASD in a different manner; the process of adjustment to a child's diagnosis can take a long time. It is not surprising that some of the researchers observed the parents of children with ASD struggling with anxiety and depression (Bitsika, Sharpley, & Ryan, 2013), post-traumatic stress symptoms (Casey, Zanksas, & Mein, 2012).

An interesting qualitative research carried by Altiere and Kluge (2008) discovered that while diagnosing a child with autism, every parent experiences a life-changing moment and goes through different phases like despair, sadness, denial, confusion and anger to try to deal with the news. Tight schedule and constant focus on a child result to the loss of support from the family members and the transformation of family connections and relationships. The need for constant care for a child (different types of habilitation and rehabilitation services) often challenges parents financially (Altiere & Von Kluge, 2008).

Recent research on subject coping mechanisms, post-traumatic growth and interlinkage of these two factors in mothers of children with ASD has attracted the deserved attention (ex. Pottie & Ingram, 2008; Bayat, 2007). Even though many professionals know that a parent's condition is directly reflected on a child (Neece, Green, & Baker, 2012), this factor is often forgotten. It is crucial to identify the factors facilitating the adjustment process and to analyze how parents adaptif they manage to find a positive outcome from the traumatic experience.Creating interventions based on these principles for parents is also important. The importance of supporting a child with ASD often attracts the whole sustainable focus and overshadows the parent's well-being crucial for the child's condition and progress.

Just a few researchesaddress this issue. There is a massive deficit in cross-cultural studies, especially in post-traumatic growth.Tedeschi and Calhoun highlight the importance of cross-national studies. They claim that post-traumatic growth reflects the uniqueness of the society and its culture as the growth following the trauma is driven by the cultural differences (Tedeschi & Calhoun, 1996). Therefore, it is extremely interesting to compare Georgia and the United States,two countries with completely different societies and culture.

An increasing prevalence of ASD raises the importance of effective intervention programs, adjusted social policy and, especially, the hidden factors such as general well-being of a child and his/her family. According to the observations of many clinicians, the well-being of a child's caregiver is reflected on the progress and the success of a rehabilitation process.

Georgian perspective: where are WE?

Georgia is a small country in the Caucasus region.It is a developing, lower-middle-income country on the crossroads of Europe and Asia. Georgia together with other developing countries tries to establish new services and approaches meeting international standards. Even though the country has undergone a massive transformation process at the beginning of the 21st century and managed to advance in many instances, still many areas remain underdeveloped. Similar situation is observed regarding the existing services for Autism.

Systematic research on individuals with autism spectrum disorder is not available in Georgia. Although, media often cites the research "Autistic spectrum disorders in Georgia: diagnostics and epidemiology issues" carried out by the Institute of Child Neurology and Neurosurgery in 2009 but even the field specialists are not familiar with this research; the results of the research are not available for a widerpublic.A large-scale study on the epidemiology of autism in Georgia has begunin 2019.

Existing services are not enough for people with autistic spectrum in Georgia. Tbilisi City Hall has launched a Rehabilitation Program for Children with Autism Spectrum Disorderin 2015, however, the City Hall initiatedto provide services only for children registered in Tbilisi (capital of Georgia) before July 1, 2015 (date of launching the Program). Later, an updated agreement was developed to provide services for the children registered in the service-providing city after 2015 as well but they had to remain on a waiting list for over a year. Not considering any consultations, the City Hall has increased the waiting period from 1 up to 3 years.

The services are currently available in Kutaisi, Batumi, Telavi, GoriandZugdidi municipalities.People from different cities need to pay service costs independently;insurance does not cover any of the services for Autism in Georgia.

Only the funding for applied behavioral analysis is available – 15 hours for ABA and 5 hours for an additional therapy. But the voucher of the City Hall/Municipality covers the children from 2 to 16 years. As soon as the child turns 16, he/she automatically loses this opportunity.

In addition, the Ministry of Health of Georgia provides a single-use or one-year vouchers for an early intervention program. However, the person receiving a voucher from the City Hall/Municipality is no more eligible to receive another voucher from the Ministry. As for the education, an Individual Educational Plan, a special education teacher and inclusive classrooms are provided for children in schools.Even though this sounds good, the Individual Education Plan is not always followed, especially, when the classrooms are crowded and the special education teacher has to work with at least 6 pupils at the same time.

Considering the fact that the needs of children with autism spectrum are not always met, the process of their full integration into communities is impeded.Not surprisingly, the

challenges, state and mental health of parents of children with autism spectrum disorder is not a priority yet. However, the longer we continue to ignore the importance of this issue, the longer it will remain under the shadow.

American perspective: where are "THEY"?

United States of America (USA) in one of the largest developed countries in the world. Compared to the developing countries, USA is distinguished with a progressed economy, infrastructure and good availability of services.

Unlike Georgia lackingsystematic research, USA monitors the epidemiology of ASD. According to the Centers for Disease Control and Prevention, the prevalence of autism in USAin 2018 is 1:59. The frequency is higher in boys (1:37) than in girls (1:151) (Baio, et al., 2018). Contrasting Georgia, the systematic research in USAaims to determine the causes of the autism, to expertise the effectiveness of the treatments and intervention and to assess the challenges of the existing services, caregivers, families and etc.

There is a major difference between the services provided all over the states of USA.Therefore, we focused on the services available in Indiana State as the participants of the research were from Indiana.

Indiana Family and Social Services Administration offers the services for developmental disabilities. Developmental disability definition in Indiana State covers autism spectrum disorder as well(Indiana Division of Disability and Rehabilitative Services, 2018). It is noteworthy that theABA therapy is covered by the insurance in many states.

Bureau of Developmental Disabilities Services is the subdivision of Family and Social Services Administration. It implements different programs considering the age of the beneficiaries. The first program is for the children up to 3 years. After the evaluation process is over, a family receives an Individualized Family Service Plan which may include the following services: assistive technology services; diagnostics; health and nutritive services; occupational, physical, psychological therapies; transportation and etc(ASD: State of the States of Services and Supports for People with ASD, 2014).

Individuals with Disabilities Education Act (IDEA) is focused on the children over 3 years. IDEA highlights that every child has the right to education tailored to his/her individual needs. IDEA also implements early intervention programs for children to facilitate their Free and Appropriate Public Education (FAPE).

At first glance, no huge difference between the services of Georgia and Indiana State is detected. But Georgian reality is still very specific, especially due to challenging economy and more visible stigma.

Purpose and objectives of the research

Purpose of this study was to better understand the experiences the mothers of children with ASD go through, to examine coping strategies they use in relation to post-traumatic growth, to highlight the possible important factors facilitating post-traumatic growth and to change the perspective. Understanding the experience can contribute to the development of better and timely psychological intervention programs designed by any mental healthcare providers working/ willing to work on psychological well-being of the caregivers of children with ASD.

Furthermore, this study is important for parents who have just faced the challenges following diagnosing a child with ASD. This study will also illustrate that even though the things may not get better, parents can start to reappraise events in a more positive way.

Method

Sample and research design

Convenience sampling was used to select Georgian and American mothers.

The mothers were chosen according to certain criteria: mothers of children diagnosedwith ASD; mothers of children in intervention - clinicians have a strong concern about thechild's diagnosis but he/she is not diagnosed yet due to being underage (ADOS diagnose age is 3 years and above). The research was carried out in two parts: Study I and Study II.

Measurements

Coping Response Inventory

Coping Response Inventory by Rudolf Moos was used to measure coping styles and strategies (See table 1).

The questionnaire includes four basic categories for coping: cognitive approach, behavioral approach, cognitive avoidance, behavioral avoidance. Each of these basic categories comprise two subcategories (see Table 1).

Table 1. Coping subtypes (Holahan, Moos, & Schaefer, 1996).

Basic Coping categories	Coping subcategories
Cognitive approach	Logical Analysis
	Positive re-appraisal
Behavioral approach	Seeking guidance and support
	Problem solving

Cognitive avoidance	Cognitive avoidance
	Acceptance or resignation
Behavioral avoidance	Seeking alternative rewards
	Emotional discharge

Semi-structured interviews could be also used along with the inventory but the study focused on a quantitative approach as it was not possible to conduct long interviews with the mothers from USA. The mothers of ASD children were given the instructions to remember how they coped with the child's diagnosisor with the professionals' assumptions about the child's preliminary diagnosis.

In order to fill the inventory, participants were asked to answer the questions with 4-level scoring system (1 meaning"not at all", 4 meaning"fairly often") (Moos R. , 1993).

The Post-traumatic Growth Inventory

Post-traumatic Growth Inventory (PTGI) by Tedeschi and Calhoun was used to measure post-traumatic growth in mothers. PTGI defines a positive legacy of a traumatic event. The inventory consists of 21 items that are united in the following scales (Tedeschi & Calhoun, 1996): relating to others; new possibilities; personal strength; spiritual change; appreciation of life. PTGI is adapted on Georgian population (Khechuashvili L. , 2015). Three factors in the Georgian and the original versions match (personal strength, relating to others, new possibilities), but the Georgian one unites appreciation of life and spiritual changes under one factor. Therefore, it includes only four scales: relating to others; new possibilities; personal strength; appreciation of life-spiritual change.

In order to fill the inventory, participants were asked to answer the questions with the 5-level Likert scale (0 meaning "I did not experience this change as a result of my crisis"; 5 meaning "I experienced this change to a very great degree as a result of my crisis").

Study I

Participants

Convenience sampling was used to select the participants. Two groups participated in Study I. First group included 23 mothers of children with ASD from Georgia (Georgian mothers) and the control group uniting 20 mothers of children without developmental disorders.

Georgian mothers of children with ASD were selected from the Institute of Neurology and Neuropsychology (INN), IliaState University Child Development Institute, and the integrated classrooms of Tbilisi Classical Gymnasium(demographic information is presented in Table 2).

As for the control group, convenience sampling was also used to select the mothers of children with typical development from Georgia.

Study II

Convenience sampling was used to obtain information from 20 mothers of children with ASD from Indiana State (American mothers). The data collected from the Georgian mothers of children with ASD during the Study I was used within the Study II as well (see table 1 for more demographic information).

	Control group	*Study I*	*mothers from GEO*	*Study I, Study II*	*Mothers from USA*	*Study II*
	n=20		n=23		n=20	
	Indicator	%	Indicator	%	Indicator	%
Age	18-29	45%	18-29	34.8%	18-29	35%
	30-40	50%	30-40	60.9%	30-40	20%
	41-50	5%	41-50	4.3%	41-50	30%
	50+		50+		50+	15%
Education	Incomplete secondary education		Incomplete secondary education		Incomplete secondary education	
	Complete secondary or technical education	5%	Complete secondary or technical education	4.3%	Complete secondary or technical education	15%
	Incomplete higher education	20%	Incomplete higher education	95.7%	Incomplete higher education	25%
	Higher education	75%	Higher education		Higher education	60%
Marital Status	Married	80%	Married	91.3%	Married	45%
	Divorced	15%	Divorced	8.7%	Divorced	10%
	Widowed	5%	Widowed	0%	Widowed	0%
	Single	0%	Single	0%	Single	25%
	Living with partner	0%	Living with partner	0%	Living with partner	20%
Number of children	1	45%	1	39.1%	1	70%

	2	45%	2	43.5%	2	15%
	3+	10%	3+	17.4%	3+	15%
Time passed after discovering child's ASD	N/A		1-6 months	34.8%	1-6 months	5%
			7-12 months	4.3%	7-12 months	20%
			13-24 months	30.4%	13-24 months	15%
			25+ months	30.4%	25+ months	60%

Table 2. Demographic variable

Results

Descriptive statistics

Descriptive statistics implied that the mean scores for three PTG subscales (new possibilities, relating to others, personal strength) and the overall PTG score were higher in case ofthe control group than in case of each group of mothers of children with ASD (see table 3).

As for coping, mothers of children with ASD from USA had higher score on avoidant coping strategies (cognitive avoidant and behavioral avoidant) and on the overall dealing with the stress with avoidant coping strategy than the control group and the mothers from Georgia.

Table 3. Descriptive statistics for coping and PTG variables

		Control group		Mothers from GEO		Mother from USA[1]		
Scales	N	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	ıglish version of scale
New Possibilities	63	14.6	5.452	14	5.625	12.1	3.528	New Possibilities
Relating to Others	63	20.55	6.262	19.3	7.637	16.3	4.824	Relating to Others
Personal Strength	63	13.5	4.662	12.7	5.049	10.05	4.407	Personal Strength
Appreciation of life-Spiritual change	63	17.5	4.246	14.3	5.295	8.2	3.650	Appreciation of life
						4.85	2.134	Spiritual change
PTG	63	65.8	16.65	60.3	18.82	51.55	15.04	
Logical Analysis	63	57	7.468	55	6.013	53	7.656	
Positive Reappraisal	63	55	8.551	55	5.582	54	5.767	
Seeking Guidance	63	54	9.030	64	4.111	59	5.507	
Problem Solving	63	55	7.749	60	4.754	58	2.800	
Cognitive Avoidance	63	62	9.515	55	10.604	64	4.879	
Acceptance or Resignation	63	55	9.339	50	12.098	61	6.086	
Seeking Alternative reward	63	61	8.158	56	7.492	67	5.486	
Emotional Discharge	63	69	9.262	61	9.650	75	5.748	
Cognitive Approach	63	112	13.89	111	8.40	107	12.30	
Behavioral Approach	63	109	14.53	123	5.87	117	7.03	
Cognitive Avoidant	63	116	17.29	105	21.43	125	8.64	

[1] Grey part of the chart indicates 5 factors of original English version of PTGI

Behavioral Avoidant	63	130	13.92	117	14.49	142	9.81
Approach style	63	221	24.46	234	11.35	224	17.25
Avoidant style	63	246	23.90	222	29.38	267	17.74
Valid N (listwise)	63						

Comparison of means

Post-traumatic growth

One-way ANOVA analysis of variance showed that the effect of the groups (Georgian mothers, American mothers, control group) was significant,$F(2,60)=3.58$ $p<0.03$. Tuckey multiple comparison test was performed at a 0.05 significant level. Tuckey test of multiple comparison indicated that there was a statistically significant difference between the control group (M=65.8, SD=16.6) and the mothers from USA (M=51.55, SD=15.05) on the overall PTG score. ANOVA test did not find any significant difference neither between the Georgian mothers and the control group ($p> 0.55$) nor between the groups of Georgian and American mothers ($p>0.22$).

Analysis of variance did not show thestatistical significance of the groups' (Georgian mothers, American mothers, control group) effect for PTGI subscales:relating to others ($p>0.205$), new possibilities ($p>0.276$), personal strength ($p>0.061$).

ANOVA test onthe subscales of spiritual change and appreciation of life was not performed as the Georgian version of PTGI questionnaire includes four subscales unlike the original English version consistingof five subscales[2]. Newly adapted and expanded version of the Post-traumatic Growth Inventory in Georgian outlines the similar number of factors highlighted in the original version (Khechuashvili, 2019)but as the research was launched before the adaptation of the expanded version, we maintained the focus on the old version of questionnaire.

Coping

A significant difference between the three groups (Georgian mothers, American mothers, control group)on coping strategies and style was revealed by ANOVA test with bootstrapping procedures. ANOVA was computed for each of 1000 bootstrapped samples with the 95% confidence (BCa) interval.

ANOVA revealed statistically significant difference between the groups on the subscales of seeking guidance $F(2,60)=11.17$, $p<0.001$, problem solving $F(2,60)=4.78$, $p<0.012$, cognitive avoidance $F(2,60)=5.72$, $p<0.005$, acceptance or resignation $F(2,60)=6.71$, $p<0.002$, seeking alternative reward $F(2,60)=12.54$, $p<001$, emotional discharge $F(2,60)=15.71$, $p<001$. We also discovered a significant difference between the groups on cognitive behavioral

[2] See paragraph 4.2.1

approach $F(2,60)=11.73$, $p<0.001$, cognitive avoidant $F(2,60)=7.09$, $p<0.002$, behavioral avoidant $F(2,60)=20.41$, $p<0.001$and, generally,on avoidant coping style $F(2)=18.03$, $p<0.001$.

Results were analyzed with Tuckey Post Hoc test for multiple comparison. TuckeyPost Hoc test revealed that the Georgian mothers preferred seeking guidance more (M=64, SD=4.11) than the American mothers (M=59, SD=5.5) and the control group did (M=54, SD=9). As for problem solving strategy, Georgian mothers (M=60, SD=4.75) had higher scores than the mothers from the control group had (and M=55 SD=7.75).

As for avoidant strategies,American mothers had higher scores on cognitive avoidance subscale (M=64, SD=2.69) than the Georgian mothers had (M=55, SD=10.6); control group mothers had significantly higher scores (M=62, SD=) than the Georgian mothershad (M=55, SD=). Overall, Georgian mothers had the lowest score on cognitive avoidance subscale. Acceptance and resignation was observed to be more preferred strategy for the American mothers (M=61, SD=6.08) than for the Georgian mothers (M=55, SD=12.09). Mothers from USA (M=67, SD=5.48) were observed to seek foralternative reward more than the Georgian mothers (M=56, SD=7.49) and the control group (M=61, SD=8.15). Georgian mothers (M=61, SD=9.65) were noticed to use emotional discharge less than the control group (M=69, SD=9.26) and, especially,the mothers from USA (M=75, SD=5.74).

Cognitive behavioral approach was observed to be used by the Georgian mothers more (M=123, SD=5.84) than by the control group (M=108, SD=14.53), while USA mothers (M=117, SD=7.03) had higher mean score than the control group had (M=108, SD=14.53).

Cognitive avoidant strategy was observed to be more preferable coping strategy for the American mothers (M=125, SD=8.65) than for the Georgian mothers (M=105, SD=21.43). As for behavioral avoidant scale, American mothers had higher scores (M=142, SD=9.81) than the Georgian mothers (M=117, SD=14.49) and thecontrol group had (M=130, SD=13.92). Herewith, Georgian mothers had significantly lower mean scores (M=117, SD=14.49)onbehavioral avoidant strategy than the control group had (M=130, SD=13.92).

Generally, avoidant coping was more used by the mothers from USA (M=267, SD=17.75) than by the Georgian mothers (M=222, SD=29.39) and the control group (M=246, SD=23.90). Compared to the control group (M=246, SD=23.90), avoidant coping strategy was less used by the Georgian mothers (M=222, SD=29.39).Under the Tuckey Post Hoc test,the prevalence of approach coping strategies was observed in case of the Georgian mothers; the prevalence of avoidant strategies was revealed in case of the mothers from USA.

Correlation analysis

Spearman correlation did not indicate to any statistically significant connection between PTG and coping strategy subscales (see table 4).

Table 4. Correlation between CRI and PTGI

	Approach	Avoidant	PTG	Cognitive Approach	Cognitive Behavioral	Cognitive Avoidant	Behavioral Avoidant	PTG_NP	PTG_RO	PTG_PG
Approach	1.000									
Avoidant	-.157	1.000								
PTG	.206	-.019	1.000							
Cognitive Approach	.824**	-.163	.094	1.000						
Cognitive Behavioral	.735**	-.092	.241	.277**	1.000					
Cognitive Avoidant	-.325**	.886**	-.016	-.357**	-.150	1.000				
Behavioral Avoidant	.139	.833**	.068	.144	.050	.508**	1.000			
PTG_NewPossibilities (NP)	.321*	-.170	.851**	.260*	.244	-.256*	.070	1.000		
PTG_Relating to Others (RO)	.093	.035	.873**	-.031	.161	.059	.055	.639**	1.000	
PTG_PersonalGrowth (PG)	.200	-.074	.837**	.087	.231	-.012	-.013	.697**	.648**	1.000

* p<0.05

** p<0.01

Spearman correlation revealed a significant statistical connection between PTG score and the approach coping strategy only in case of the control group ρ=0.493, p<0.027. Autism group did not identify any significant correlation between coping and PTG.

Regression Analysis

Hierarchical regression was carried out to observe the predictive value of coping strategies in PTG. The first model of variables included group identification (control group, American mothers, Georgian mothers) and education. The Second model of variables united approach and avoidant coping styles.

Regression results indicated that the groupbelonging (Georgian, American, control)B=0.318, p=0,011 and the approach coping style, B=0.304, p=0,015, were independent predictors in case of post-traumatic growth. Belonging to a particular groupand approach style variables explained 15,2% of variation (R^2=0.152, F(2)=5.379, p<0.07). When controlling

for group variable 6.4% of variation was explained by its effect R^2=0.064, F (1)=4.167, p<0.046.

Discussion

Increased prevalence of Autism in the world raised the importance of studying the way of emotional challenges the family has to go through after diagnosing.

Existing researches are not able to identify a universal effective coping strategy. Every family member individually deals with the problem.However, there still are some "mainstream" coping strategies more frequently used by parents of children with ASD.

Problem seeking guidance is observed to be the most common coping strategy among the Georgian mothers. Problem seeking guidance is followed by emotional discharge, problem-solving and seeking alternative reward. This ranking of coping strategies was little different in case of the American mothers. Emotional discharge is observed to be the most common coping strategy among the American mothers, followed by seeking alternative reward, cognitive avoidance and acceptance or resignation. It is important to mention that the first four coping strategies used by the American mothers are united underthe scale of avoidant coping strategy, while the balance of the approach and avoidant coping strategies is evident in case of the Georgian mothers.It is hard to identify the causes of this difference. Several researches showed that the mothers of children with ASD use more positive coping strategies than it was expected. Namely, they seek for support and try to positively reappraise the situation (Bashir, Khurshid, &Qadri, 2014 and Vidyasagar& Koshy, 2010). The research by Vidyasagar& Koshy (2010) showed that coping is not always a way out of the situation; sometimes mothers use avoidance/escape behaviors to handle the case. Our research indicated that both methods are used by parents, considering their group belonging. We have received controversial results related to the country of the group.

Several factors could have contributed to the result highlighting that the American mothers prefer avoidant coping strategies. To begin with, the groups were composed by the mothers of differentage. More women over 40 were represented in the American group than in the Georgian group. Mentioned age imbalance can be the reason of getting different results on the coping strategy preferences. In some cases, few decades have been passed after the child was diagnosed with ASD; mothers may have experienced difficulties when recalling the strategies used several years ago. Current strategies reflecting the years of intensive care may have overshadowed the previous ones. We assume that together with acknowledging the concept of coping flexibility (Kato T., 2012) and it's role in stress management, it also worth to think about backwards process influenced by the experience.

Tedeschi and Calhoun (1995) state that the more the person works on overcoming the trauma, the more likely post-traumatic growth will occur. We have not examined this tendency but the control group revealed significantly higher post-traumatic growth than the

mothers of ASD children. It is difficult to determine the triggering factors hidden behind our results. Autism is not a one-time trauma. This trauma is stretched in time and it highly depends on a child's condition, which may also be inconsistent.

Constant attempts to improve a child's condition, and to involve him/her in intensive habilitation/rehabilitation services may not always lead to the impactparents are expecting. Caregivers'constant endeavoris not always followed byfruitful results.

Herewith, individualism and collectivism are related to coping and post-traumatic growth. Different developmental stages of the countries may also have an influence on the results of the research. Georgian mothers struggle to seek for the habilitation/rehabilitation services for their children not only due to poor economic conditions but due to the lack of existing services in general[3] as well, while the mentioned services are widely accessible for the American mothers.Constant fight for funding and the deficit of services may be the reason of both: loss of fighting spirit among the Georgian mothers and the difference between PTG levels.

Georgia is an orthodox country. Religion is more prioritized in Georgiathan in the United States. It is commonly knownthat the religion has a potential to become a factor facilitating PTG; traumatic event can also deepen a person's spiritual beliefs (Shaw & Stephen, 2005). Georgians' attitude towards any stressor reflects the religious view that "God won't give anything that a person can't handle". Dominant religion of the Indiana State is Christianity as well but not orthodox one. The research has not studied this variable, thus it will be difficult to make any assumptions based on this factor. In order to deepen the hypothesis on mediator factors of cross-cultural difference in PTG further research is needed.

Zhang and colleagues (2013) found a positive relation between positive coping and increased post-traumatic growth. The mothers they have examined reported about the mediate level of PTG but Zhang and colleagues did not find any correlation between negative coping and PTG. Positive coping resulted an increased score on the subscale of relating to others. We observed the same results in our research. Generally, results showcased the role of approach coping strategy in post-traumatic growth.

Research limitations

The research was carried out among 63 participants (43 in the target group, 20 in the control group) so the results can't be generalized for the whole target group. Furthermore, the control group included only the Georgian mothers of children with typical development.

[3]for example, in some regions of Georgia, there are no rehabilitation facilities and for diagnostics, parents have to come to central cities

Instructions given to the groups were different: the instructions for ASD mothers highlighted to focus on a stressful event e.g. ASD diagnosis of their children while no such instruction was fixed for the controlgroup. This fact could also have an impact onthe results.

All members of the target group were carrying their children to special centers. The Sampling didn't include the mothers who are not able or do not want to carry a child to special centers.

Also, because of convenience sampling especially problematic is results for control group, who only consisted of mother of children without developmental disorders only from Georgia.

The research has not determined the functioning level of the children with ASD that can also be an essential determinant for post-traumatic growth and positive coping strategies.

Acknowledgement

I want to thank Ketevan Karbaia to make it possible to collect the data in the United States. I want to thank my friends, Lia Janashiaand Sophia Vibliani, alsomy research supisor, Tamar Gagoshidze for their input in this research. Special thanks to LiliKhechuashvili for her generous contribution to this research, for sharing her knowledge and instruments for post-traumatic growth.And the first and the foremost, great thanks to each and every mother who participated in this research and who are now trying to find a better way.

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