Emotional Regulation in Autism Spectrum Disorders: A New Proposed Model for Regulating Emotions through Parent Education

Vidya Bhagat¹, Mainul Haque², Nordin Bin Simbak¹, Rohayah Husain¹

¹Faculty of Medicine, Universiti Sultan Zainal Abidin, Jalan Sultan Mahmud, 20400 Kuala Terengganu, Terengganu, Malaysia.
²Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia, (National Defence University of Malaysia), Kem Sungai Besi, 57000 Kuala Lumpur, Malaysia.

*Corresponding Author: Mainul Haque (Email: runurono@gmail.com)

Abstract

Autism spectrum disorders (ASD) may affect all spheres of a child's life. One of the areas of the behavioral spectrum need to be focused is affected. Thus, the study is enthused in impaired emotional regulation (ER) affecting children with ASD. The significance of ER is related to that promoting adaptive behavior in children; indeed, disturbed ER in ASD children leads to emotional and behavioral problems. Commonly children with ASD lack adaptive ER strategies thus they react impulsively and inadequately to emotional stimuli thus it affects their psychological well-being. Though ER in ASD children is intrinsic the nurturing of these children with an understanding of ER can promote better psychological wellbeing. Thus, study objectives to examine a) the impact of ASD on their ER b) the impact of ER on the psychological wellbeing of children with ASD c) To develop awareness among these parents regarding the impact of ER on the psychological wellbeing of their ASD child. d) To propose a new model of parental education about ER and its significance on psychological wellbeing of ASD children. This study takes a base on the keenly examined past evidence on impaired ER in ASD children and its impact on the psychological wellbeing. Proposal for aiding ER through parental education has introduced. The conclusion drawn in this study is that the intervention can be more promising with educating parents regarding ER, may help their child to gain maximum from therapeutic intervention. The new proposed model of intervention extends the further scope for research in this regard.

Keywords: ASD; Emotional regulation, Parent’s education, Intervention.

Introduction

A Few Definitions

ASD is a highly prevalent neurodevelopmental disorder characterized by persistent deficits in social communication and restricted and repetitive behaviors (RRBs). ¹ ASD is now defined by the American Psychiatric Association's Diagnosis and Statistical Manual of Mental Disorders (DSM-5) as a single disorder that includes disorders that were previously considered separate — autism, Asperger's syndrome, childhood disintegrative disorder and pervasive developmental disorder not otherwise specified. ² ASD is a developmental disability that can cause significant social, communication and behavioral challenges. ³ Autism is a developmental disability. Children with autism, also known as ASD, have social, communication and language problems. They also have restricted and repetitive patterns of behavior, interests, or activities, such as flipping objects, echolalia, or excessive smelling or touching of objects. Autism may be mild or severe. All children with autism don't have the exact same problems. ⁴
Prevalence of Autism Spectrum Disorders

The first research studies regarding the prevalence of autism, which was conducted in the 1960s and 1970s in Europe and the United States, revealed commonness estimates in the range of 2 to 4 cases per 10,000 children. This led to the impression that autism was a rare childhood disorder. The earliest prevalence studies also found a consistent sex difference, with boys being three to four times more likely to have autism than girls. After the development of diagnostic criteria for autism that occurred in the late 1980s and 1990s, autism prevalence studies around the world showed dramatic increases.

The global prevalence of ASD is assessed at about 0.7%, even if the evaluations vary with populations. Prevalence estimates for ASD have been mounting continuously over recent years, a result which has been ascribed mostly to the inclusion of all ailments of the spectrum into autism prevalence reported that the median of the prevalence of ASD spectrum disorders was 62/10 000. India is the second most overcrowded country of the planet. A large share of the inhabitants of this nation is below 20 years of age but still, there is a scarcity of data on the prevalence and incidence of many developmental complaints. One cross-sectional two-phase research was conducted among children of 1-10 years of age revealed that prevalence rate of 0.9/1000 and the highest rate was detected in the rural India. The prevalence of autism in Oman was assessed to be 1.4 per 10,000 children, in 2011.

Nevertheless, this was popularly thought to be an underestimation, due to the under-diagnosis and under-reporting of ASD cases. The Sultan Qaboos University Hospital, Oman, estimated in 2015, the national prevalence of ASD around 8.5 cases per 10,000 children but data is not published, which is much lower than international estimations (60-70 cases per 10,000 children).

Emotional Regulation

An emotion can be broadly defined as a complex psychological state involving a physiological response, a subjective feeling, and a behavioral response. Problematic emotional behavior as expressed in tantrums, irritability, aggression, self-injury, anxiety, and impulsivity is often reported by parents of children with ASD and professionals. Emotion regulation (ER) is a term commonly used to describe a person’s ability to effectively manage and respond to an emotional experience. People unconsciously use emotion regulation strategies to cope with difficult situations many times throughout each day. ER is a construct that may provide explanatory power for understanding the observed emotional and behavioral problems in ASD.

ER is generally defined as the automatic or intentional modification of a person’s emotional state that promotes adaptive or goal-directed behavior. ERs are a complex process that involves initiating, inhibiting, or modulating one's state or behavior in each situation – for example, the subjective experience, cognitive responses, emotion-related physiological responses, and emotion-related behavior. Functionally, ER can also refer to processes such as the tendency to focus one’s attention on a task and the ability to suppress inappropriate behavior under instruction. ER is a highly significant function in human life.

The Impact of Autism Spectrum Disorders on their Emotional Regulation

Children with ASD lag in their cognitive development have poor ability to conceptualize emotional stimuli than normal children. It’s important to be insightful to deal with various emotional stimuli for better adoption, children with ASD lack this emotional insight.

The current study observes that most of the studies related to ASD are focusing on the emotional experience of ASD child that demonstrates less coherent representations of emotional experiences and use unusual strategies for interpreting emotionally reminiscent encounters. The few studies that have attempted to understand emotion ER in children with ASD have consistently found more emotional dysregulation compared to typically developing children throughout early childhood development.
The current study analysis reveals that most of the studies regarding emotional responses focus more on the negative and less positive affect of them. Studies regarding emotional responses in differentiating youth with ASD show more negative responses to emotional stimuli compared to youth with non-ASD.

This study reviews that the population with ASD has limited cognitive insight this may be due to their poor concept development. It has been observed by the researcher that youth with ASD, their emotional experience and the physiological consequences of emotion is with the limited cognitive insight.  

The current study reveals that though the sample sizes are limited in most of the studies predominantly high-functioning samples which are available in the reviewed researches bring the understanding those individuals with ASD generally lack the emotional insight needed for effective ER. The current study has analyzed that the high-functioning of emotions in children with ASD commonly go with overt cues in descriptions of their emotion; indeed, they are nonspecific regarding their emotional experiences. 

**Emotional Regulation and Psychological Wellbeing**

The current review focuses on ER and its impact on psychological wellbeing. The information regarding the presence of poor ER in ASD population has been observed in the surveys conducted on ASD with this regard.  

Furthermore, the current research has observed in empirically established theoretical understanding regarding ER deficits in children with ASD and its increased risk leading to psychiatric disorders.

The current study has reviewed the studies on health care and the cost analyses showed that children with ASD have received more psychiatric care than non-ASD children.  

This study has also analyzed the disturbances in psychological wellbeing in ASD children evidenced by observed data on ASD children receiving prescribed psychotropic medications.  

The current review analysis supports the evidence set by the earlier studies regarding the presence of inadequate ER strategies in ASD.  

The disturbances in psychological wellbeing has been analyzed by the current study further reviewing on the persistence in difficulties in identifying and describing emotions though differences in emotional experiences are controlled. The current study has reviewed that young children with ASD found with using poor coping strategies compared to children without ASD. 

**Impaired ER, Neurocognitive Correlates, and Comorbid Psychiatric Disorder**

The current study analysis evidences the previous studies regarding impaired ER in ASD also have coexistence of a psychiatric disorder. It is also understood that poor ER may be intrinsic to ASD. It could also be that specific psychiatric disorders and ER deficits in ASD stake the clinical and neurobiological features making it difficult to untie the source of the behavioral disturbance. The current study has reviewed that disruptive mood dysregulation is common in ASD.  

This study has also analyzed that the impaired mood regulation in individuals with bipolar disorder has categorical similarities in individuals with ASD. However, their severe mood dysregulation has a neurocognitive correlates with mood problems. 

Therefore, the manifestations of emotion dysregulation in ASD is distinct from any other non-ASD population. The current study has observed that impaired ER has been associated with several disorders such as anxiety disorders, mood disorders, and borderline personality disorder.  

Perhaps, mechanisms underlie inadequate ER may have relevance to ASD. Observations of the current study have evidenced infants who having more irritability and less positive affect showed high chances of developing ASD.  

The current study has evidenced ER typically activates several areas of prefrontal cortex and subgenual anterior cingulate cortex that has a role in the modulation of affective experiences. 

The further current review study observes the existing studies on modulation of the amygdala has a role in emotional experience by ventromedial PFC including ACC is a refrain of affective neuroscience, further, it learns that the abnormalities in
ventromedial PFC/amygdala connectivity implicated in mood and anxiety disorders.\textsuperscript{38, 39} This study has also evidenced in its review that the PFC deficits may account ER deficits in ASD.\textsuperscript{40} The current study analyses that many studies emphasizing the need for further researches related to the parameters surrounding amygdala activation in ASD. Although the further investigation into the parameters adjacent with amygdala activation in ASD.

Indeed, it has been observed that individual differences in the functioning of the brain in ASD and the level of anxiety in ASD influenced by the functions of the amygdala. Thus, most of the recent studies highlight the importance of attentional mechanisms in an examination of emotion systems in ASD\textsuperscript{41, 42}.\textsuperscript{43} has been observed by the current review study.

The case for amygdala and PFC involvement in ER dysregulation in ASD is strong; the need for understanding ER in the context of broader networks and with complex modulatory connections between structures\textsuperscript{44} has been evidenced in the current study analyses. The current study analysis further evidences on the studies about complex modulatory connections between structures and its network to understand ER in ASD population had revealed high relevance. This study has further evidenced in its review that the broad abnormalities in multiple gray and white matter structures in ASD.\textsuperscript{45, 46}

**Education to Parents’ Regarding ASD and its Association with ER**

Parenting process is significant in endorsing and fostering the cognitive and emotional development of children from infancy to adulthood. Since the cognitive and emotional development goes hand in hand that facilitates ER in children as well as an adult. The current study has reviewed the strong relationships between social and emotional functioning in typically developing children.\textsuperscript{47}

Thus, parental understanding regarding this aspect becomes significant for parents of ASD children since they have the major role in fostering the social and emotional development of these children. The current review evidence analyzing several studies that describe regarding emotional influence on social behaviors either positive or negative ways that depend on the aptness of ER and expression.\textsuperscript{48} The review analysis in the current study observes that the children with poor ER lack the feat in their social interactions skills. Thus, commonly children with ASD this emotional dysregulation worsens their socializing difficulties resulting in social rejection and social neglect.\textsuperscript{49} Parents focus on these aspects of their suffering child becomes significant. Thus, the current study signifies considering social and cognitive aspects regarding ER part of parental education in the intervention and management of ASD children.

Educating parents may result in betterment of the intervention program. The current study analyses that many interventions for children with ASD have focused on addressing behavior problems. The systematic behavior management through substituting undesired behaviors with alternative desired behaviors. And consequently, these desired behaviors are reinforced and made to repeat.

Teaching social skills through modeling is also carried away simultaneously to help the ASD child.\textsuperscript{23} The current study had observed that most of the interventions focused on socioemotional development in ASD children they basically involved in teaching emotions through pictorial form; here emotions and related facial expressions are depicted on the cards with a proper labeling on it.\textsuperscript{25} Thus it is important to teach children with ASD to recognize their own emotional states and learning strategies to manage snooping emotions causing impairment in ER.

Intervening ASD children with their ER plays a way to improved social abilities and behaviors. Further various applied behavior methods can be used for targeting these social and behavioral aspects of these children as a part of the intervention. These intervention methods dealing with emotion dysregulation of ASD children has come out with promising results. Parents of these children undergoing training and educating them regarding ER is focused in the current study. Educating parents to help their ASD child by identifying situations and when an ER strategy should be used. This step can
bring the flexibility in implementation which is essential to train the child with ER skills. Further, educating parents’ regarding the strategies that can help the child to face the potentially difficult situations. The well-known thought of functionalist regarding ER suggests there is a conscious strive in person for regulating positive and negative emotions to attain set goals. 37

The current study receipt the evidence of clinical observations that support ASD children lack this ER regulation thus they tend to react to emotional stimuli intensely without clear goal-direction. The current study has evidenced the studies regarding ER on ASD that support the facts that use of suppression, resignation, and avoidance determining ER in ASD lacks the motivational component thought to be integral to ER.

This apparent lack of motivation in ER may be due to poor emotional insight and self-monitoring need to be attended. 25,32 The current study signifies parent education for the ER on reinforcing strategies for motivational aspects of their ASD child. This review study observed evidence reveal that the cognitive flexibility and difficulties in ER in children with ASD instigated by maladaptive strategies thus need to implement more adaptive strategies. This study has made understood that the adaptive ER strategies are contextually dependent thus its application become selective based on the situations in the Childs environment. But it has been observed that the maladaptive strategies are more commonly applied. 35

The current study observations on evidence bring into notice that the differences in information processing and perception in ASD children. Their heightened sensitivity to environmental influences and their resistance to change affect ER in them. 50 Parents understanding and realization may help in their parenting thus the current study signifies the education for parents parting this knowledge.

Impaired ER in ASD and treatment integrating psycho-education

The current research has evidenced the feasibility and efficacy of psychosocial, pharmacological, and other treatment approaches for impaired ER in ASD. Clinicians some time go with researches done on clinical populations other than their clients with ASD for making adaptations to their clients. To assess ER in a clinical context the observation method is most informative and pertinent regardless of clients’ verbal ability or cognitive function. It is helpful in assessing the individual reaction to emotional stimuli, as well as positive emotions expressed during receiving a reward. Such observational data provide information useful to case conceptualization regarding ER.

The current study observes that if poor ER is determined as an explanatory factor for the clinical presentation in ASD child treatment integrating psychoeducation for the parents on ER and adaptive and maladaptive strategies can be fruitful. It brings the insight in parents and gets realization regarding their reliance on a maladaptive strategy and that these strategies are modeled for their ASD child.

The current study analysis evidence that psychoeducation about ASD and ER can promote an assessment of environment and acceptance coping abilities as well as difficulties. 51 The current study has observed that an innovative neuroimaging study of the brain of children with ASD more specifically with developing children during the processing of emotions in music and related facial expression. Its analysis reveals that children with ASD activate similar brain regions (neuro-typical) while listening to emotional music. Thus, these research studies appreciate emotions in ASD children while listening to the music. 52, 53

The Proposed Model of Parental Education

The model focuses on educating parents’ ER in ASD children. This current study has analyzed the evidence of various holistic interventions including parents training as a part of an intervention. The current study tries proposing a model for parent education in this area focusing on ER to promote psychological wellbeing. Since the previous evidence has proven impairment in ER leading to psychiatric illness. Skill expansion
and conceptual development in an early stage, emotions are toned with motives thus also stressing these aspects becomes significant (Figure 1). The proposed model helps to overcome some of the loopholes in parenting may also contribute to the long-term sustained growth in the following intervention. Incorporation of parent education in the intervention focused in this research study would help to fill the areas passed over with ignorance. It is also vital in structuring the environment belonging to the ASD child focusing on their ER regulation. The current research support and advocacy can have made fruitful with help of parents and supporting governmental, non-governmental, and health organizations working for ASD.

The current review study proposes and recommends parental education paving a way to the strategic management of ER in ASD children as a part of the intervention. Though it is not very feasible for all the parents it has its own benefits in the treatment regimen and widens its scope for further research. Further, the variables recommended in this model should be appraised with respect to interrelating effects to improve the multidimensional and the unifying bond between the models. These variables can and should be added if they contribute to the therapeutic benefits. These strategic practices eventually allow more comprehensive comparison between ASD treatments developing healthy parenting to promote psychological wellbeing in their children.

The overall analysis and implication of the variables discussed in this model would discover the additional benefits of the intervention and set the platform for future research with this regard. However, the approaches are not free from the limitation; perhaps the implications of this approach open the gate for the clinicians for their future research and the practice based on the current findings may lay a favorable ground for their interventions of ASD. A new proposed model for intervening methods for ASD recommends parent education regarding emotional regulating to aid psychological wellbeing in ASD children. Reviews under the head above: A Few Definitions, prevalence of Autism Spectrum Disorders, emotional regulation, the impact of Autism Spectrum Disorders on their emotional regulation, emotional regulation and psychological wellbeing, impaired ER, neurocognitive correlates and comorbid psychiatric disorder, education to parents’ regarding ASD and its association with ER, impaired ER in ASD and treatment integrating psycho-education are analyzed to has been taken into account to formulate Suggestions for the Intervention Planning are tabulated (Table 1)

Table 1: List of Reviewed Evidences from the Above Studies Suggesting Prologs for the Intervention Planning

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>The current research had reviewed the evidences from the above studies and suggested prologs regarding different aspects of ER regulation for parents’ education is listed below:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ASD is dynamic, severe and persistent disorder.</td>
</tr>
<tr>
<td>2</td>
<td>The children with ASD lack emotional insight and social skills dealing with emotional situation.</td>
</tr>
<tr>
<td>3</td>
<td>They cognitive development takes its own pace because of deficits they have.</td>
</tr>
<tr>
<td>4</td>
<td>Parent’s understanding about these deficits specifically impaired ER in their ASD children is important.</td>
</tr>
<tr>
<td>5</td>
<td>ER deficits in ASD stake the clinical and neurobiological features making it difficult to unite the source of the behavioral disturbance.</td>
</tr>
<tr>
<td>6</td>
<td>the cognitive flexibility and difficulties in modulating ER in children with ASD instigated by maladaptive strategies thus need to implement more adaptive strategies</td>
</tr>
<tr>
<td>7</td>
<td>ER has neurobiological base parents understanding and acceptance helps them to mend their own reaction with their child.</td>
</tr>
<tr>
<td>8</td>
<td>ER strategies are contextually dependent thus its application become selective based on the situations in the child’s environment.</td>
</tr>
<tr>
<td>9</td>
<td>Apparent lack of motivation for ER may be compounded by poor emotional insight and self-monitoring thus parental help with specific strategy for ER is beneficial.</td>
</tr>
<tr>
<td>10</td>
<td>The parents’ knowledge in these areas has beneficial effects on effect on interventional programs.</td>
</tr>
<tr>
<td>11</td>
<td>The interventions for ASD are open to further advancement; parent education can aid intervention of ASD children.</td>
</tr>
<tr>
<td>12</td>
<td>Evaluation of ASD therapy beginning from assessment of the child should extend to parent’s knowledge regarding impaired ER and its association to psychological wellbeing of ASD child.</td>
</tr>
<tr>
<td>13</td>
<td>Emotions and facial expressions appear in ASD children while listening to the music and related charges take place in brain regions.</td>
</tr>
</tbody>
</table>
Learning Theories for Strategic Plan

Behaviorism is a theory of animal and human learning that only emphasizes on quantitatively noticeable activities and markdowns mental actions. Behavior theorists define learning as nonentity more than the attainment of novel behavior. Behaviorism learning theories assume a pupil is principally passive and will be shaped through positive or negative support. Learning is consequently defined as an alteration in behavior. It is also supposed that behavior is a function of its outcome, meaning, a pupil will reproduce similar behavior if positive support provided.

Cognitivism concentrates on what arises in the mind such as thinking and problem-solving. New knowledge is accommodated on the old. Apprentices need full of life partaking to learn. Deviations in behavior are detected, but only as a signal of what is fascinating in the student’s brain. Cognitivism exploits the allegory of the mind as like a computer the data that has processed is learned.

Theory of Constructivism shoulders that the social collaboration is essential for intellectual progress. Social learning goes before development and stated that every function in the child's cultural development go firstly with social level, and later, with individual level. The Zone of Proximal Development in learning is the distance between a learner’s ability to perform a task under adult guidance and with peer collaboration and their ability to solve the problem independently and learning occurs in this zone.

Social learning theories assume that the child is more likely to attend to and imitate those people it perceives as like itself. Consequently, it is more likely to imitate behavior modeled by people of the same gender.

As soon as the people around the child respond to the behavior it imitates either with reinforcement or punishment. Reinforcement can be external or internal and can be positive or negative.

The child will also observe consequences of other people behave when imitating someone's behavior. A person learns by observing the consequences of models they observe. Based on above theoretical aspects strategic plan for parent education has been drawn by authors.
Figure 2: Strategic plan for parents to help their child with impaired ER. Based on learning theories

Conclusion
Recent years the treatment of ASD is incredibly advanced because of its growing prevalence rate. The advancements in the field focus more on holistic approaches in intervention programs. The interventions advanced through parental involvement and they consider ASD and related problems with the different viewpoint. Intervention methods have is more challenging in this field. The parents’ education and paves incredible support to the treatment program, though it is a difficult option. Since it demands a lot of time and cost all the parents. However, the external agencies such as government, non-government and other health agencies can support in their own way e.g. starting the centers in different areas, public travel benefits, funding to these health care centers and so on.

Though the parental training can be carried on different perspective the current study emphasizes parents’ education conceptualizing regarding ER in ASD children and its association with different behavioral aspects. Perhaps, this study focuses on accounting the evidence of ER impacting the psychological wellbeing of ASD child, various strategies used in the intervention in the management of ER and its impact on behavior. Further using this evidence-based information to set up a new model for regulating emotions through parent education as a part of the therapeutic intervention to promote psychological wellbeing in their suffering child. This is a proposed educational model for the parents of ASD child. This model may be useful in setting up new guidelines though this area is may be questioned. The studies and researches can aid to bring advancement in planning interventions with regulating holistic approach with parents’ education in the ER management of ASD children found to be productive. Eventually, conceptualizing the importance of managing strategies in ER and parents helping with this regard as a part of intervention may pave a way to prolific results and floors the extending the scope for researches in this area. Reviewing limitations in the existing educational programs for parents of ASD children in the intervention the current study suggests a new educational model for parents to promote better results.

The highlighted area in this study has been extended to ER in ASD, parents understanding and conceptualizing this fact has been put into a new model. The current review examines’ the problem encountered with impaired ER in ASD children can be reduced and thereby reduce the risk for psychiatric disorders. ER is closely connected to psychological wellbeing. Parents of ASD
need to internalize the knowledge regarding various aspects related to ER such as lacking goal-directed behavior, emotional insight, social skill, and conceptual development in these aspects. Thus, this study recommends psychoeducation for parents of ASD children regarding various aspects of ER to partake the knowledge. To get optimal benefits of intervention program set for ASD children.

A thematic analysis of the data identified ER has a close association with psychiatric illness in ASD population. It has been also identified the lack of emotional insight and social skills in ASD children has an impact on their ER and in turn influence their psychological wellbeing.

There is a possibility of impaired ER leading to disturbances in psychological wellbeing and further leading to psychiatric disorder. Thus, this study concern about educating parents regarding ER and its impact on psychological wellbeing of their ASD child.

Parental knowledge regarding ER and the strategies of management of impaired ER in ASD children and application of this knowledge in their parenting paves a way to the psychological wellbeing in these children. Parents of ASD children knowing more about ASD treatment and management will lead to better interventional results. The proposed model makes sure that the treatment modality for the ASD is not only being applied to the treatment of these children but also includes parents and their involvement with evaluation and conceptualizing ER. Also educating them with regarding impaired ER in their ASD children different situation based strategies to manage their psychological wellbeing.

Many therapy models on parent training have evaluated parental involvement with different perspective. However, the complexity in the treatment and management of ASD has an open door for further overall advancement. The significance of knowing the interventions in ASD with a better understanding of the mechanisms of treatment is emphasized in the study. Thus, the current proposed model facilitates the parental understanding in conceptualizing impaired ER and its effect on psychological wellbeing. However, long-term treatment is often limited by scarce in the understanding of interventional benefits.

The fact stated in related researches has been conceptualized in the present study and recommended to bring out the thoughtfulness regarding structural changes to benefit the intervention for ASD. Thus, the proposed model pays a way in the enrichment in parents’ knowledge and understanding the ER related aspects in their children that can aid to management of their ASD child. The suggested intervention program in this model is psycho-education regarding ER disturbances and strategic management of ER. The appraisal is done in this area to know the dodges in the field but then again requisites for substantiated other related researches.

References


© 2009-2017, JGPT. All Rights Reserved.


