

Developmental competencies, temperament, parenting practices and psychosocial adversities in internalizing disorders

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Abstract

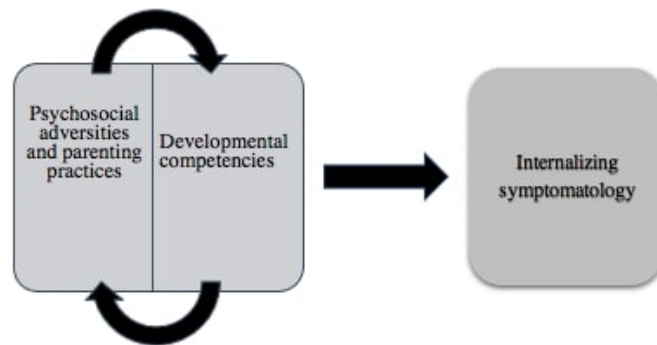
Research on the etiology of internalizing disorders has focused on biological and environmental factors, however, the role of developmental competencies has not been explored much. The aim of the current report is to understand the developmental competencies, temperament, parenting practices and psychosocial adversities in internalizing disorders. The relationship of each of these domains with functional impairment was also explored. The developmental competencies considered in this study include interpersonal competence, emotion regulation, executive functioning, adaptive behaviour and self-concept. The sample consisted of 30 children and adolescents with internalizing disorders belonging to the age group of six to 18, and one of their parents. Descriptive statistics and correlational analyses were used to analyse the data. The findings revealed that positive parenting shares an inverse relationship with functional impairment; other variables were not found to be related to impairment. On comparison with non-clinical samples in previous studies, interpersonal competence and self-concept were found to be at lower levels in the current sample. A model of a bidirectional relationship between individual and environmental factors together contributing to internalizing disorders has been proposed. The study will be continued on a larger scale on a clinical group and control group to test the significance of this model.

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Figure 1

Contribution of individual-environment interaction towards internalizing disorders



Developmental competencies, temperament, parenting practices and psychosocial adversities in children with internalizing disorders – A pilot study

Abstract

Research on the etiology of internalizing disorders has focused on biological and environmental factors, however, the role of developmental competencies as contributing factors has not been explored much. The aim of the current report is to understand the developmental competencies, temperament, parenting practices and psychosocial adversities in internalizing disorders. The relationship of each of these domains with functional impairment was also explored. The developmental competencies considered in this study include interpersonal competence, emotion regulation, behavioural indicators of executive functioning, adaptive behaviour and self-concept. The sample consisted of 30 children and adolescents with internalizing disorders belonging to the age group of six to 18, and one of their parents. Descriptive statistics and correlational analyses were used to analyse the data. The findings revealed that positive parenting shares an inverse relationship with functional impairment, while the other variables were not found to be related to impairment. Additionally, on comparison with non-clinical samples in previous studies, interpersonal competence and self-concept were found to be at lower levels in the current sample. Based on these findings, a model of a bidirectional relationship between individual and environmental factors together contributing to internalizing disorders has been proposed. The study will be continued on a larger scale on a clinical group and control group to test the significance of this model.

Keywords: Developmental competencies, internalizing disorders, temperament, psychosocial adversities, parenting practices

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Mental health disturbances among children are quite common, and are usually chronic. The prevalence of mental illness in children and adolescents below the age of 20 was estimated to be 6.46% (Malhotra & Patra, 2014). Internalizing disorders such as major depressive disorders and anxiety disorders were most common in this age group. Early research in internalizing disorders has been limited due to its symptoms not being as observable or intrusive as in externalizing disorders. However, it has been expanding over the past few decades. Internalizing disorders are conceptualized as ‘overcontrolled’ problems and include depression, anxiety, social withdrawal, and somatic problems (Merrell, 2008). Other classifications have also included dissociative disorders, and trauma and stress related disorders under internalizing problems (Regier, Kuhl & Kupfer, 2013).

About the etiology, internalizing behaviors have been studied in the context of familial transmission, temperament, environmental factors such as maternal tobacco use, psychosocial adversities like abuse, neglect, violence in the family, poverty, and parental separation (Liu, et al., 2011). However, we also know from the literature that no single factor can explain the range of psychopathology. Instead, a combination of factors will play a significant role, like biological (e.g. age, sex, temperament), psychological and developmental (e.g. cognitive and socio-emotional skills, coping strategies) and environmental (e.g. parenting practices, home environment, social support, opportunities for optimal development and learning) (Agnafors et al., 2017; Sahithya & Raman, 2021).

Biological factors such as age and sex can have a differential effect on psychopathology. For example, there is a higher preponderance in males for early-onset disorders such as conduct disorders. Late-onset disorders such as anxiety and depression occur more frequently in females, among other differences (Altemus et al., 2014). Similarly,

temperamental factors such as emotional regulation and coping can play a role in psychopathology (Compas et al., 2017). Conversely, very few studies have looked at developmental factors and their relationship with child and adolescent psychopathology.

When diagnosing an internalizing disorder, it is common to look into environmental aspects as precipitating factors. Life events, adverse family circumstances, including low socioeconomic status, poor living conditions, marital discord among parents, poor modelling, inconsistent or harsh discipline, and limited opportunities for learning, are associated with emotional and behavioural disturbances (Avasthi, 2010; McLaughlin & Hatzenbuehler, 2009; Rutter, 1999; Zhang et al., 2020).

The study of developmental and psychological processes involved in internalizing disorders has been limited and has only been gaining popularity in recent times. However, it has long been known that developmental competencies can play a role in determining how an individual responds to life events and adverse circumstances (Camfield, 2011). There can be a bidirectional relationship between the individual and the environment (Cicchetti & Valentino, 2015), where the environment can have an influence on developmental competencies (Ray et al., 2020) and the competencies of the individual can also have an impact on how a person responds to the environment (Sanchez et al., 2012; Bornstein et al., 2017). While there are many developmental processes that have been highlighted in literature, the most relevant to this study have been found to be interpersonal or social competence, executive functioning, emotion regulation, self-concept, and adaptive behaviour. In the current study, these skills have collectively been termed as developmental competencies as they denote the skill acquisition that help navigate social, emotional, cognitive and behavioral tasks at different developmental stages; and also involves forming a positive sense of identity and self (Eccles & Gootman, 2002). Camfield (2011) highlighted the importance of social competence in building resilience to deal with adverse life events.

Through a case based analysis, he showed that social competence is one of the important components in the pathways to resilience and well-being. Similarly, in the context of maltreatment, Kim-Spoon et al. (2012) found emotion regulation to be a mediator between emotion lability-negative and internalizing symptomatology. It has also been found that clarity of self-concept plays a mediating role between adverse childhood experiences and adult psychopathology (Wong et al., 2018). Additionally, in children with attention-deficit/hyperactivity disorder, children with high executive functioning levels were found to be less prone to bullying victimization or perpetration (Liu et al., 2017). Multiple domains of adaptive behaviour have also been found to be low in children who were institutionalized and have undergone early social deprivation (Naumova et al., 2019). From the above studies, the importance of developmental competencies and its bidirectional relationship with the environment can clearly be seen. Thereby, it is anticipated that psychosocial adversities and developmental competencies have a bidirectional relationship, which in turn influences internalizing psychopathology in children, as denoted in Figure 1.

Figure 1

Studies have also identified developmental competencies, the internal psychosocial processes such as affect regulation, cognitive set or processes and altered patterns of interpersonal functions (Rutter & Sroufe, 2000) to be involved in internalizing disorders. For example, Carter, Briggs-Grawn and Davis (2004) found that delays in socio-emotional development in early childhood can persist over time and lead to anxiety and depression among other disorders. Similarly, emotion regulation has also been found to be associated with internalizing disorders, and has usually been found to play a moderating role (Kim & Cicchetti, 2010). From the few studies which have considered executive functioning in the context of internalizing psychopathology, Hughes and Ensor (2011) found that low gains in

executive functioning during the transition to school predicted both internalizing and externalizing disorders. In addition cognitions about the self, such as self-schemas may also be related to internalizing disorders. Burgess and Younger (2005) identified that socially withdrawn behaviors are related to internalizing disorders and children with these characteristics had the tendency to remember negative descriptors about themselves. From these studies, it is evident that these various skills or abilities have a role to play in internalizing disorders.

The above studies reflect the developmental psychopathology concept of equifinality and multifinality (Ollendick & Hirshfeld-Becker, 2002). Varied factors such as biological and psychosocial factors can lead to an internalizing disorder, reflecting equifinality. In addition, any of these factors could lead to multiple internalizing disorders, reflecting the concept of multifinality. The importance in considering the developmental aspects in psychopathology has been emphasised in both the clinical and research context (Rutter & Sroufe, 2000; American Psychological Association, 2013). However, a review of empirical studies suggests that despite the emphasis on developmental psychopathology, the various developmental competencies have been looked at in isolation. While looking at psychopathology in children and adolescents, taking a holistic perspective and understanding the developmental tasks in different age groups and their attainment, temperamental variables, and environmental factors and how these contribute to the development of the disorder will have important implications.

There are few studies which have used similar tools as the current study, thereby making themselves available for comparison with the findings of the current study. The study by Mahoney et al. (2003) offers data on normal controls on interpersonal competence, and Hutchison et al. (2019) on executive functioning and emotion regulation. Sakano et al. (2019) found the composite standard score on adaptive functioning to be low among children with fetal alcohol exposure, however, many of these individuals were also found to have low IQ.

Frick et al. (1999) report age trends for self-perceptions of parenting practices in children with conduct disorders, showing that all aspects of parenting such as involvement, corporal punishment and consistency can play a role in conduct disorder. Some of the studies have been conducted in the Indian context. Jogsan (2012) has studied family environment in both families of drug users as well as non-drug users, revealing that there are significant differences in all domains of family environment between both the groups. Malhotra et al. (2009) showed that there is no association between temperament or life events with psychiatric disorders in children; however, Malhotra (2015) showed that psychosocial adversities are associated with psychiatric disorders in children.

This preliminary report is part of a larger study. This report focuses on the initial analysis of a small group of participants from the clinical group. The aim of the report is to understand the developmental competencies, temperament, parenting practices and psychosocial adversities in internalizing disorders. The objectives are to measure the level of each of the above variables in children with internalizing disorders, and to analyse the relationship between some of the important variables with impairment and to examine the findings in light of the existing literature.

Method

Participants

The participants of the current study were recruited from the Child and Adolescent Psychiatry out-patient and in-patient settings of XXXXXX [institute], XXXXXX [place], XXXXXX [country]. They were recruited between March 2020 to January 2021. These children were diagnosed with various internalizing disorders diagnosed by a psychiatrist according to the ICD-10 guidelines which include F93- Emotional disorders with onset specific to childhood – Separation anxiety disorder, phobic anxiety disorder, and social anxiety disorder. It also includes disorders under F40- Phobic anxiety disorders, F41- Other

anxiety disorders, F43 – Reaction to severe stress and adjustment disorders, F44- Dissociative disorders, F45- Somatoform disorders, as well as F32- Depressive episode, and F-33 – Recurrent depressive disorder. It was ensured that their age was between six to 18, and that the onset was less than 3 years prior to the interview. Children with neurological conditions, externalising disorders, neurodevelopmental and intellectual disability and learning disability were excluded. Children whose parents had a current diagnosis of psychiatric disorder were also excluded. Parents were required to have above five years of education, and to be able to read and write. Overall, 30 children met the inclusion criteria and were included for this study.

Tools

A socio-demographic and clinical data sheet was developed to obtain basic demographic information and case history of the participants.

Strengths and difficulties questionnaire (SDQ; Goodman, 1997). It is a brief behavioural screening questionnaire which contains 25 items which fall under the sub-domains of hyperactivity, emotional problems, peer problems, conduct symptoms and prosocial scale. Emotional and peer problems together form the internalizing scale, and hyperactivity and conduct form the externalising scale. A high score indicates more significant difficulties. Based on their scores, children can be classified into close to average, slightly raised/lowered, high/low, very high/very low. The parent-completed form was used for this study.

Brief impairment scale (BIS; Bird et al., 2005). This scale offers global impairment scores and has a total of 23 items on which impairment can be rated on a range from no problem to serious problem. Questions are based on work/school, interpersonal relations, and self-fulfilment. High score means greater impairment.

Interpersonal competence scale (ICS; Cairns et al., 1995). It is a brief scale with a 7 point rating for each item, and has a total of 18 items assessing social and behavioural characteristics. The three primary factors measured are aggression, academics and popularity. High score means better interpersonal competence.

Brief rating inventory of executive functioning 2 (BRIEF-2; Gioia et al., 2015). BRIEF-2 is a parent report inventory with 63 items based on a behavioural rating of child's executive functioning. There are three primary indexes, which are emotion regulation index (ERI), Cognitive regulation index (CRI), and Behaviour regulation index (BRI). The ERI is used as a measure of the emotion regulation competency, and it consists of the Shift and Emotional Control domain. High score indicates better competence in executive functioning.

Piers Harris children's self-concept scale 3rd edition (Piers, 2018). This scale contains 58 items based on the child's perception of self and has Yes/No options. The domains are based on different aspects of one's self. High score means more positive self-concept.

Vineland adaptive behaviour scale II (VABS II; Sparrow, Cicchetti & Balla, 2005). The parent interview version of VABS II was used for this study. It measures adaptive behaviour from birth to 90 years of age. It measures the primary domains of communication, daily living skills, socialisation, and motor skills. High score means better adaptive behaviour.

Raven's progressive matrices (Raven, 1936; 1938). Colored Progressive Matrices (CPM) was used for children up to 11.5 years of age, and Standard Progressive Matrices (SPM) was used for adolescents above this age. It contains of matrices for the children to solve with 3 sets for CPM and 5 sets for SPM with increasing difficulty level. It is a non-verbal indicator of general intelligence. High score indicates higher level of intellectual functioning.

Temperament measurement schedule (TMS; Malhotra & Malhotra, 1988). It is a rating form based on a parent interview, based on Thomas and Chess' nine domains of temperament. It consists of 45 items and results in five important temperamental variables—Sociability, Emotionality, Energy, Attentivity and Rhythmicity. A rating of 1 to 5 is given based on the frequency and intensity of behaviours. High score means better sociability, more emotionality, higher energy levels, high distractibility, and better rhythmicity.

Alabama parenting questionnaire (APQ; Frick, 1991). The child report form of APQ was used where children rate their perceptions of parenting practices by the father and mother. It includes the domains of positive involvement, supervision and monitoring, positive discipline techniques, consistency in the use of such discipline and use of corporal punishment. It has 42 items and has a five point Likert scale rating from Never to Always. The meaning of high score differs based on each sub-domain.

Life events scale for Indian children (Malhotra, 1993). It is a parent-report form with 50 items, and yields both an objective and subjective stress score for each item. It has been developed for the Indian context. High score indicates greater stress levels.

Family environment scale (FES)– Indian adaptation (Joshi & Vyas, 1997). The FES was initially developed by Moos and Moos (1986). The adaptation consists of 79 items, with domains of relationship, personal growth , and system maintenance. The primary domains that it measures include interpersonal relationships, personal growth and system maintenance. The meaning of high score differs based on each sub-domain.

Parent interview schedule – PIS (WHO, 1990). It is a semi-structured interview to study the psychosocial problems present in children and adolescents. It is used to assess deviance or disturbance in the child's family and environment. The areas covered are intrafamilial communication, qualities of upbringing, nature of immediate environment, life

events, societal stresses, and interpersonal stress at home, school or work. High score indicates more psychosocial adversities.

Procedure

Participants who met the inclusion criteria were recruited. Informed consent was received from the parents followed by assent from the child. The parents were interviewed initially using the Socio-demographic data sheet and Clinical data sheet and, post which they filled the SDQ. The interview was then resumed with Temperament Measurement Schedule, Parent Interview Schedule, Brief Impairment Scale, followed by VABS II. This was followed by Colored Progressive Matrices or Standard Progressive Matrices for the child, and Self Concept Scale and Alabama Parenting Questionnaire. Following this, questionnaires were given to the parents that included Interpersonal Competence Scale, BRIEF-2, Life Events Scale and Family Environment Scale.

Data Analysis

Data was analysed using descriptive and inferential statistics. Shapiro Wilk Test was used to check for normality, and mean and standard deviation were calculated for variables with normal distribution, while median and quartile deviation for non-normal distributions. Further, correlational analyses using Pearson's and Spearman were performed for normal and non-normal distributions respectively to understand the relationship between different variables and impairment. The data was analysed using IBM SPSS Statistics Version 27.

Results

Table 1

Table 1 shows that the mean age of participants is 15.8 years (SD = 2.0 years) and around 74.2% of them are females. Majority of them (64.5%) belong to middle

socioeconomic status and urban background (80%). Most fathers have completed graduation or post-graduation, and mothers have completed graduation.

A separate analysis indicates that the mean impairment score was 29.59 (SD = 11.28; range: 9-44).

Table 2

Table-2 shows the levels of sociability and emotionality and their correlation with impairment. The means of emotionality and distractibility are similar to what has been found in previous literature. Sociability, energy, and rhythmicity are seen to be slightly lower in the current sample compared to previous literature (Malhotra et al., 2009). There is no significant correlation found between temperament and impairment.

Table 3

Table 3 shows that there is no significant correlation between the developmental competencies and level of impairment. While interpersonal competence and self-concept is seen to be lesser than healthy controls in previous literature, executive functioning and emotion regulation is higher than the sample in the previous literature.

Table 4

Table 4 shows that the level of father's involvement is more in the current sample compared to the previous literature while mother's involvement is lesser. Monitoring is slightly better while disciplining is inconsistent and corporal punishment is higher. Positive parenting shares a significant correlation with functionality. That is, higher the positive parenting, lower are the functional impairments in children ($Q = -0.62$; $p = <0.001$).

Table 5

Table 5 shows that the family cohesion, conflict, organisation and control are lesser in the current sample compared to previous literature. Subjective and objective stressors related to life events are significantly higher in the current sample. The level of psychosocial adversities is also noted to be higher. There is no significant relationship noted between psychosocial adversities and impairment.

Discussion

The current study aimed to understand the levels of developmental competencies, temperament, parenting practices and psychosocial adversities in internalizing disorders. The study was done on a small sample; though it sought to study individuals of different age groups and genders, most of the children were females and older adolescents. In this context, information about the levels of factors specific to the individual such as developmental competencies and temperament, and the environment related factors of parenting practices and psychosocial adversities was collected. The relationship of these factors with impairment due to the internalizing disorder was studied.

Temperament

The scores on the domains of sociability, energy and rhythmicity were found to be lower in the current sample compared to the study by Malhotra et al. (2009). Leve, Kim and Pears (2004) found that shyness in early childhood is an indicator for later internalizing disorder; sociability thus may be low for children with internalizing disorders. High levels of shyness and inhibition have also found to increase the probability of developing internalizing disorders (Oldehinkel et al., 2004; Hornbuckle, 2010). Decreased energy or activity levels are

also associated with depression as they are conceptualized as being related to deficits in the behavioral activation system (McFarland et al., 2006). Similarly challenges related to regularity in sleep and eating in early childhood have been found to be related to mood disorders in later life (Ong et al., 2006). Though these domains have been found to differ from healthy controls in previous literature, a relationship with impairment levels have not been found in the current study.

Developmental Competencies

The developmental competencies of interpersonal competence and self-concept have been found to be lower in the current internalizing sample compared to healthy controls in previous literature as expected. As noted earlier, behavioral inhibition or the tendency for withdrawal from social situations has been found to be associated with internalizing disorders (Hornbuckle, 2010); this could thus be associated with lower levels of social or interpersonal competence in children with internalizing disorders. Since early childhood, those with internalizing issues are found to have lower levels of social competence compared to other children (Merrell, 1995). Many studies have shown that there is a negative relationship between self-concept and levels of depression or anxiety (Yang, 2002; Dowd, 2001). Interestingly, the levels of executive functioning and emotion regulation have been found to be higher in the current sample than the healthy controls from literature. Even previously, executive functioning has been mainly studied in the context of externalizing disorders (Rinsky & Hinshaw, 2011; Trani et al., 2011). Though previous literature has emphasized the role of emotion regulation in internalizing disorders (Zeman et al., 2002; Kim-Spoon et al., 2012), so far, this study has not found this influence.

Parenting Practices

Parenting practices have always been considered an important factor in developmental psychopathology. Father's involvement has been found to be slightly more

and mother's involvement slightly lesser compared to previous literature. Positive parenting shares a significant inverse relationship with impairment. Previous studies have found that negative parenting practices play a role in the development of depression and anxiety symptoms in children (Otto et al., 2015); however, the meta-analysis by Pinquart (2016) found that positive parenting aspects were related to internalizing disorders. Under negative parenting, corporal punishment was seen to be significantly higher compared to previous literature. Kingsbury et al. (2019) emphasize the role of harsh parenting in the development of both internalizing and externalizing disorders.

Psychosocial Adversities

Cohesion, organization and control in the family in this study are seen to be at lower levels compared to families from previous literature. However, conflict was also found to be at lower levels. Thus, it is possible that many of the families in the current study share a distant relationship with each other, which reduces opportunities for conflict. Subjective and objective stress levels related to life events were found to be significantly higher in the current sample in relation to previous literature. In addition, subjective stress levels were related to impairment levels. This is in line with previous studies which have shown that stressful life events are associated with internalizing symptoms through mediating factors such as anxiety sensitivity (McLaughlin & Hatzenbuehler, 2010). Similarly, psychosocial adversities are also seen to be higher in this sample compared to previous literature based on parent interview. Many studies have shown that early adversity is associated with internalizing disorders, but are moderated by certain factors like coping skills and continued stress levels (Hazel et al., 2008).

Limitations

Since there was no control group, the results have only been compared to findings from previous literature, without statistical analysis. The range of disorders considered in this

study is quite varied including depression, anxiety, somatization and dissociation, and the age range of the children and the age of onset is also quite large, which need to be controlled for in further studies. Factors such as whether the children have undergone interventions have also not been considered. Data has been collected retrospectively and may be subject to forgetting and recall biases.

Conclusions

Based on the above results and the findings from previous studies, it is evident that it is not just environmental factors and adverse life events that contribute to internalizing disorders. Rather, individual factors such as interpersonal competence and self-concept may also be involved. Considering the importance of both individual and environmental factors, a model of a bidirectional relationship between both these factors which in turn contribute to internalizing disorders need to be considered, as denoted in Figure 1. This model can be tested out through regression and path analysis in the larger sample as the study moves forward and also in further longitudinal studies.

Thus, the current study shows that most of the domains studied under temperament, developmental competencies, parenting and psychosocial adversities differ from previous literature. However, only the environmental factors of positive parenting practices and subjective stress levels related to life events are found to be related to impairment.

Future Directions

The study will be continued on a larger scale on a clinical group and control group with 100 children in each group to overcome some of these limitations. The model needs to be tested with a larger sample; age-wise comparison is needed to understand the evolution and significance of the developmental competencies; longitudinal studies can offer more substantial data in this regard.

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