

Development and Validation of Jegadeesan and Maimoona Impulsivity Parent Rating Scale (Jam-Iprs) for Adhd Children

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Abstract

Aim: The aim of this study is to develop and validate the Jegadeesan and Maimoona Impulsivity Parent Rating Scale (JAM-IPRS) among ADHD Children.

Objectives

- Ø To generate the scale items through focus group discussion.
- Ø To identify the appropriateness and relevance of the items through subject matter Expert Rating.
- Ø To establish the psychometric properties of developed scale.
- Ø To develop norms for developed scale.
- Ø To translate the scale items in a two vernacular languages Tamil and Malayalam

Methodology: Formulation of 42 statements was done with focus group discussion. The statements are sent to 50 experts in the field of Occupational Therapy, Speech Therapy, Psychologist and Special Educator for validating the items. Total of 42 items are validated by the experts. A total of 60 samples (30 normal subjects and 30 impulsive subjects) were selected for the field trial/ main study those who were under occupational therapy management at the age range between 5 – 13 years residing Kerala (Malappuram and Thrissur) and Tamilnadu (Erode and Komarapalayam). Samples were selected by using convenient sampling method. Socio-demographic data sheet prepared by investigators were used for collecting information regarding the name of the child, number of siblings, birth order, type of family, parental occupation and parental education.

Conclusion: From the statistical analysis the assessment's Cronbach alpha value is $\alpha = 0.68$ to 0.72 which shows the assessment tool has good internal consistency, reliability. The expert validation was done and got good relevance or content validity for all the scale items. The Test-Retest Reliability of developed scale is 0.725 . Hence Jegadeesan and Maimoona Impulsivity Parent Rating Scale(JAM-IPRS) can be used to identify the level of impulsivity for ADHD children.

Key Words: ADHD, Impulsivity Parent Rating scale, Psychometric properties

Introduction

Impulsivity has been defined as a predisposition toward rapid, unplanned reactions to internal or external stimuli with diminished regard to the negative consequences of these reactions to the impulsive individual or others^[1]. In simplest terms, it is particularly broad and fragmented personality construct^[2]. Impulsivity can describe a person's tendency to give

into cravings, inability to plan or weigh options before deciding, seek out adventure or thrills, lack of patience, inability to appreciate consequences, and propensity for uninhibited inappropriate behaviours^[2]. These broad characterizations suggest the extent to which impulsivity is defined in everyday terms; ostensibly, impulsivity encompasses a wide range of daily events^[2].

The prevalence of ADHD appears to vary considerably throughout different region of the world. It is highest in south areas and lowest in east areas. This is thought to be due to environmental and behavioural changes, in addition to differences in diagnostic criteria used throughout the world. In DSM-IV criteria 6-7% of people under 18 affect ADHD. But in ICD-10 criteria the rate is 1-2% [3].

In 2010, at 7 years, the prevalence of hyperactivity was 7%, inattention 9.5%, impulsivity 7% [4]. In 2016, the estimated number of children and adolescents ever diagnosed with ADHD, according to parent report, was consistent with previous estimates from the National Survey of Children's Health. Approximately 9.4% (6.1 million) of children 2-17 years of age ever been diagnosed with ADHD-hyperactive impulsive, according to parent report (age 2-5: 388,000 children, ages 6-11: 2.4 million children, ages 12-17: 3.3 children) [5].

Impulsivity in ADHD leads to emotional instability, lack of empathy, stress, sleep disorders, depression, eating disorders, memory problems, compulsive behaviour, self-harming behaviour and problem in body weight status [6].

Higher level of impulsivity leads to conduct disorder, oppositional behavioural disorder, personality disorder especially cluster B disorders (antisocial personality disorder and border line personality disorder) and risky behaviours like suicidal tendency [7].

In children, it leads to impairment in the development of child's social skills (verbal and non-verbal communication, eye contact, following cues, listening, controlling temper etc.) impairment in cognitive components like attention, concentration, creativity, isolation of the child, need for instant gratification, affecting the child's performance in academics, social participation in school like drama and speech [8].

In young people, it leads to increased risk of academic failure, dropping out of school/college, teenage pregnancy, criminal behaviour and traffic violation such as speeding violation, drunk driving, licence suspension, driver caused accidents [9].

As many as 60% of individuals with ADHD symptoms in childhood continues to have difficulties

in adult life. The impulsive behaviour in adult ADHD persons have to face many problems like dismissed from employment, interpersonal difficulties, lateness, absenteeism and excessive errors in work place, relationship difficulties, break-ups with spouse, poor parenting and increased the risk of drug and substance abuse [10].

This study research impulsivity rating scale to the children under 18 years of age, as important current issues within the scope of impulsivity rating based on the concept modelling, which was developed through the contributions of Ernest Barratt (1995), Dickman S.J (1990), Whiteside & Lynam D.R (2001), Eysenck (1978) [11].

Since 1978, 6 studies have rated impulsivity less than 18 years of age group. The BIS measuring trait impulsivity in attentional, motor and non-planning and most widely used instrument for assessment of impulsiveness [12]. The IVE designed to measure trait impulsivity across 3 factors: impulsivity, venturesomeness and empathy [13]. The DII measure impulsivity in 2 subscale: functional impulsivity (the tendency to act with relatively little forethought when this is optimal), dysfunctional impulsivity (the tendency to act with relatively little forethought) [14]. The UPPS examine 5 subscales: urgency, premeditation, perseverance, sensation seeking and positive urgency. The LHIB measures the incidence of impulsive behaviour [15].

Need for the Study

Numerous studies suggest that high levels of impulsivity are associated with deficits in regulating behavioural and physiological responses associated with reward, behavioural inhibition, and decision making processes. There is no one in India prepared a valid assessment tool to rate impulsivity for ADHD children. There is a need for the tool to assess impulsivity among Indian children into ADHD. Hence this study has been attempted to develop and validate Impulsivity Rating Scale.

Aim

The aim of this study is to develop and validate the Jegadeesan and Maimoona Impulsivity Parent Rating Scale (JAM-IPRS) among ADHD Children.

Objectives

- Ø To generate the scale items through focus group discussion.
- Ø To identify the appropriateness and relevance of the items through subject matter Expert Rating.
- Ø To establish the psychometric properties of developed scale.
- Ø To develop norms for developed scale.
- Ø To translate the scale items in a two vernacular languages Tamil and Malayalam.

Methodology

Research Design and Sampling

This was a quantitative research design. A total of 60 samples (30- normal subjects and 30- ADHD subjects) were selected for the present study those who were under occupational therapy management at the age range between 5 – 13 years residing Kerala (Malappuram and Thrissur) and Tamilnadu (Erode and Komarapalayam). Samples were selected by using convenient sampling method. Socio-demographic data sheet prepared by investigator were used for collecting information regarding the name of the child, number of siblings, birth order, type of family, parental occupation and parental education.

Inclusion Criteria

- Ø The child aged between 5 – 13 years
- Ø Both genders were selected.
- Ø Both the parents have knowledge and understanding to read English, Tamil and Malayalam.

Exclusion Criteria

- Ø The children aged above 14 and below 4 years were excluded.
- Ø Parents of child with neurological disorder, psychiatric problem and other problems which interferes the test have been excluded.

Tools

- Ø Socio Demographic Data Sheet

Ø Jegadeesan and Maimoona Impulsivity Parent Rating Scale (JAM-IPRS)

Description of tools

Socio-demographic data sheet

This proforma is intended to gather information regarding the name of the child, age, gender, education, family type, number of siblings, birth order, diagnosis,

Procedure

The present study was conducted in three phase are as follows:

Phase 1: Focus group discussion and item generation

Phase 2: Scale validation

Phase 1: Focus Group Discussion and Item Generation

Step 1: Item Generation and Focus group Discussion

In this phase, potential items were generated for parental assessment of impulsivity as well as its domain by the investigators. For the scale development, items were pooled through available tools/review of literature as well as through 2 Focus Group Discussion with 13 experts. Then 50 experts were asked to provide the item relevance and appropriateness. The experts are those who are working or having experience related to Mental health Professionals and or experience related to ADHD or impulsivity children, and professional from occupational therapy were included.

Phase 2: Scale Validation

Step 1: Face Validation and Expert Rating

The instrument with developed items was given to 50 professionals (Occupational therapist, Psychologist, Special educators or specialist in child psychiatry), in order to arrive at a set of items to be included in the scale. Expert rating was solicited for content appropriateness, difficulty level items on a scale and addition or deletion of items were considered.

Step 2: Data Collection

The developed screening scale was administered on 30 subjects having children with ADHD aged 5 – 13

years. The data obtained from convenient sample was subjected for item analysis of the test items.

60 subjects (30 normal children and 30 impulsive children) of both genders, the age group between 5-13 years, so meeting the inclusion and exclusion criteria were selected the subjects after obtaining the informed consent as well as from their registered clinic Ma'din

Lifeshore Advanced Paediatric and adult rehabilitative centre, Melmuri, Swalath nagar, Malappuram, Occupational Therapy Foundation, Thiruchengode. Written informed consent was obtained after the detailed explanation about the study from the samples. So, socio-demographic data and battery of impulsivity was administered on 60 samples.

Data Analysis and Results

Table – 1 shows the test retest reliability

	Mean	Standard Deviation	Test-Retest Reliability
Test	154.30	6.894	0.725**
Retest	162.0	7.2207	

Correlation is significant at the 0.01 level.

Table – 2 shows the Norms of the developed Jegadeesan and Maimoona Impulsivity Parent Rating Scale

S. No.	Range	Interpretation
1	0-42	Not significant
2	43 - 84	Mild level of Impulsivity
3	85 – 127	Moderate level of Impulsivity
4	128 and above	Severe level of Impulsivity

Discussion

The aim of the study was to develop and validate the psychometric properties of Jegadeesan and Maimoona Impulsivity Parent Rating Scale. This battery consists of 42 items for parents having children with ADHD impulsivity at the age of 5 to 13 years.

Data was recorded for computer analysis. Descriptive statistics such as frequencies and percentages examined the socio-demographic information as well as each statement. For the item difficulty in the final phase, factor analysis and internal consistency, reliability was established for the developed instrument. SPSS 23.0 (statistical package for social science) was used to analyse the obtained data. The mean value of each

selected item that consist of 42 mean value rated from 2.2 to 3.86. Factor analysis (extraction method) shows the Cronbach’s alpha of all 42 items and shows the internal consistency, reliability value from 0.68 to 0.72 and overall Cronbach’s α value is 0.710.

Table 1 shows the test retest reliability of Jegadeesan and Maimoona Impulsivity Parent Rating Scale. The mean value of the test is 154.30 and retest is 162.0. The standard deviation of test and retest are 6.894 and 7.2207 respectively. Test-Retest Reliability value of Jegadeesan and Maimoona Impulsivity Parent Rating Scale is 0.725. Correlation is significant at the 0.01 level.

Table 2 shows the norms of Jegadeesan and Maimoona Impulsivity Parent Rating Scale. The range

0-42 indicates not significant impulsivity; the range 43-84 indicates mild level of impulsivity; the range 85-127 indicates moderate level of impulsivity; the range 128 & above indicates severe level of impulsivity.

Hence it concludes that all 42 items of impulsivity rating scale are valid and reliable.

Summary

Ø All the 42 statements were generated through three focus group discussion.

Ø Identifying the appropriateness and relevance of the statements through expert rating.

Ø Total 50 experts were rated the 42 statements, the statements rated 0-4 (5 point rating).

Ø Initial data collection has been conducted for 30 ADHD peoples.

Ø After factory analysis all the statements were extracted or have consistence with each statement rating from 0.68-0.72, and overall Cronbach's α value is 0.710 indicates the scale has good internal consistency.

Ø Test-Retest Reliability has been done the reliability is 0.725.

Ø Norms were created for the developed scale.

Ø Translate the scale statements in two vernacular language Tamil and Malayalam.

Conclusion

From the statistical analysis the assessment's Cronbach alpha value is $\alpha = 0.68$ to 0.72 which shows the assessment tool has good internal consistency, reliability. The expert validation was done and got good relevance or content validity for all the scale items. The Test-Retest Reliability of developed scale is 0.725. Hence, Jegadeesan and Maimoona Impulsivity Parent Rating Scale(JAM-IPRS) can be used to identify the level of impulsivity for ADHD children.

Ethical Clearance : Taken from Institutional Ethical Committee Of JKK Munirajah Medical Research Foundation, Namakkal, Tamilnadu.

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Conflict Of Interest: Nil

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