

Development And Pilot Study Of The Money Awareness And Management Assessment Checklist For Individuals With Developmental Disabilities (MAMAC-IDD)

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Abstract:

Money Awareness and Management skills for individuals with developmental disabilities are especially crucial for independent living and effective participation in everyday activities, highlighting the need for assessment and intervention in this domain. Moreover, there is a scarcity of standardized, culturally appropriate assessment tools in India assessing monetary skills. This led to the development of 'Money Awareness and Management Assessment Checklist for Individuals with Developmental Disabilities (MAMAC-IDD)', a tool for both assessment and intervention. The checklist has a total of 16 dimensions divided into Money Awareness and Money Management. The instrument was developed and pilot tested on a sample of individuals with developmental disabilities (N=44). The total Monetary Awareness and Management score among individuals with developmental disabilities was found to be $M=61.84$ ($SD=48.77$) and $M=37.39$ ($SD=27.16$). The MAMAC-IDD was found to successfully and suitably assess money awareness and management in individuals with developmental disabilities across a wide range of dimensions. The MAMAC-IDD helps identify the skill level in different domains and provide target areas for improvement of monetary skills in individuals with developmental disabilities. The checklist paves a way for evaluation among special educators, psychologists and allied professionals involved in the care and support of individuals with developmental disabilities.

Keywords: Money assessment checklist, individuals with developmental disabilities, intervention planning, autism spectrum disorder, intellectual disabilities, skill development checklist India

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I. Introduction

Monetary skills for children or individuals with developmental disabilities involve teaching them about the concept of money and the importance or value of the concept of money.

Monetary skills are crucial for independent living and successful participation in everyday activities, making them a fundamental aspect of life skills education for children, especially those with developmental disabilities. The concepts of money awareness and management involve understanding basic financial concepts, handling money, budgeting, and performing simple transactions, which are essential for fostering independence. The ability to manage money effectively not only supports personal autonomy but also improves self-confidence, social integration, and overall quality of life for children and adolescents as they transition into adulthood.

However, the development of monetary skills can be particularly challenging for individuals with developmental disabilities due to impairments in cognitive processing, problem-solving, memory, and attention. Children or adults with developmental conditions such as intellectual disabilities, autism spectrum disorder (ASD), and attention-deficit/hyperactivity disorder (ADHD) may find it difficult to grasp abstract concepts such as value, budgeting, and financial transactions. This, in turn, affects their independence and may increase their

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dependency on caregivers. Despite the clear importance of monetary skills, limited research exists on targeted interventions aimed at improving these skills among individuals with developmental disabilities.

Importance of Monetary Skills for Children and Individuals with Developmental Disabilities

For children and individuals with developmental disabilities, monetary skills go beyond financial independence; they also play a significant role in developing functional life skills. Mastery of monetary skills is crucial for tasks such as shopping, planning purchases, and understanding the value of money, all of which are linked to greater autonomy in everyday life. Studies have shown that individuals with developmental disabilities often face deficits in numeracy, abstract reasoning, and executive functioning, all of which are important for monetary management.

Monetary skills are associated with cognitive functions such as working memory, attention, and executive control, areas that are frequently impaired in children with developmental disabilities. Hence, interventions focusing on enhancing these skills can also indirectly benefit cognitive development. According to adaptive behavior studies, children with special needs who are exposed to structured learning in monetary management tend to develop better life skills and exhibit more independence in adulthood.

Global and Indian Context

Globally, 52.9 million children aged below 5 years had developmental disabilities in 2016 (Olusanya et al., 2018). As of 2019, 317 million children and young people had conditions contributing to a developmental disability (WHO & UNCF, 2023).

In India, the prevalence of developmental disabilities is similarly high, with estimates suggesting that 2.5-3.4% of children have various developmental issues as per a state-wide Aanganwadi-based systematic survey, wherein 69.3% were children with developmental delay, 14.3% were children with speech delay, 5.7% included children with global delay, 5.3% consisted of children with gross motor delay and 3.6% were children with hearing impairment (Kamath, 2015). This percentage rises in underprivileged communities, where access to education, specialized care, and interventions is limited.

In India, efforts to improve life skills, including monetary skills, for children with developmental disabilities have been constrained by the lack of appropriate assessment tools and intervention strategies. Most existing programs are adapted from Western contexts, which may not address the specific socio-cultural needs of Indian children with special needs. This gap is further amplified by the absence of comprehensive tools designed to both assess and intervene in the development of monetary management skills in individuals with developmental disabilities.

Availability of Monetary Skills Assessment Checklist in India

There are a few checklists that assess monetary assessment skills for children/individuals with developmental disabilities in India. However, these checklists are not solely assessing monetary skills, they are overall functionality assessment checklists with a money sub-scale, such as 1) Behavior Assessment Scales for Indian Children with Mental Retardation (BASIC-MR) – PART-1, Money sub-scale; 2) Madras Development Programming System (MDPS) – Money sub-scale; 3) Functional Assessment Checklist for Programming (FACP).

There is no Indian tool or checklist that is a comprehensive and sole assessment and intervention checklist for monetary skills. To address this need, MAMAC-IDD was developed as it is an invaluable tool aimed to assess the functionality level of monetary skills, the awareness and management of money skill level for children/individuals with Developmental Disabilities, Intellectual Disabilities, Autism Spectrum Disorder, Specific Learning Disorder, Attention Deficit Hyperactivity Disorder/Attention Deficit Disorder and related disorders.

Significance of the Study

There is a scarcity of standardized, culturally appropriate assessment tools in India that focus on monetary skills for individuals with developmental disabilities. While some studies have explored the challenges faced by children with developmental disabilities in acquiring functional skills, little attention has been given to developing interventions specifically targeting monetary management. Existing tools are either too broad, focusing on general life skills, or too narrow, lacking an emphasis on financial independence.

Internationally, research has shown the positive effects of targeted interventions on improving life skills, including monetary management, in children with special needs. However, such interventions are often tailored to Western contexts, and there is minimal evidence supporting the use of these interventions in India. The cultural, educational, and socio-economic differences between India and Western countries necessitate the development of tools that are context-specific and culturally relevant.

Furthermore, the existing body of research has largely focused on the assessment of cognitive and adaptive behavior deficits in children with developmental disabilities, with limited attention paid to the development of practical skills like money management. This creates an urgent need for a dual-purpose tool that can assess monetary skills and also be used as an intervention to foster skill development.

A number of studies highlight the importance of early interventions aimed at improving financial literacy, independence and related life skills for individuals with developmental disabilities. Browder et al. (2008) emphasized the effectiveness of systematic instruction in teaching monetary skills to children with intellectual disabilities.

In India, Wolbring & Ghai (2015) highlighted the socio-economic challenges faced by children with disabilities, particularly those from low-income families, and called for culturally relevant tools to assess and address their functional deficits. Further, research has pointed out the lack of comprehensive life skills training in special education curricula in India and stressed the need for integrated tools that assess and intervene in key areas of development, including money management (Das & Sarkar, 2015).

Another relevant research explored the impact of skill training programs on adaptive behavior in individuals with developmental disabilities. Their findings showed that individuals who participated in structured life skills programs showed improvements in daily living activities, including money handling. However, the study also highlighted the lack of specialized tools for assessing monetary management skills (Sharma et al., 2016).

Conceptual Definitions

Single vs Multiple Denomination:

A **single denomination** for any amount of money refers to the most direct or easiest calculation for that particular amount for organizing, counting and/or transacting money. For instance, if the item or skill requires a child to transact money amount of 10 Rupees using single denomination, they would be taught to simply utilize a coin or note of 10 Rupees directly. This helps the child in understanding the value of the amount of money at a base level.

A **multiple denomination** for any amount of money involves multiple calculations or combinations to make up the particular amount in total for organizing, counting and/or transacting money. For instance, if the item or skill requires a child to organize money amount up to 10 Rupees using multiple denominations, they would be taught to collect and organize five coins of 2 Rupees ($2 + 2 + 2 + 2 + 2 = 10$) or two coins or notes of 5 Rupees ($5 + 5 = 10$) or one coin of 1 Rupee with two coins of 2 Rupees with one coin or note of 5 Rupees ($1 + 2 + 2 + 5 = 10$) and so on.

II. Methods

Development of the MAMAC-IDD Tool

The Money Awareness and Management Assessment Checklist for Individuals with Developmental Disabilities (MAMAC-IDD) seeks to address this gap by providing an assessment tool that is also designed for use as an intervention. The tool assesses individual's functionality across several dimensions of monetary skills, including money awareness, budgeting, and the ability to perform financial transactions. By tracking progress over time, MAMAC-IDD allows caregivers and educators to tailor interventions to the specific needs of each individual, thereby improving their ability to manage money and enhancing their overall independence.

This study records the pilot test of the MAMAC-IDD tool for individuals with developmental disabilities in the Indian context. It is anticipated that this tool will fill the existing gap in monetary skills assessment for individuals with special needs in India, offering a comprehensive framework for both assessing and intervening in the development of financial literacy. The study will also explore the effectiveness of the tool as an intervention strategy, with the ultimate goal of promoting greater independence and life skills development among individuals with developmental disabilities.

The MAMAC-IDD tool development and Pilot Study

The development of the MAMAC-IDD involved a systematic process of item generation based on expert observation and further by pilot testing of scale development. Following the initial development phase, the MAMAC-IDD was administered to a sample of 44 individuals with developmental disabilities, aged 7 to 29 years old to pilot test the tool. The sample was taken from Learning Ladder Therapy Centre, New Delhi, India of all individuals regularly coming to the centre during the duration of the study.

Money Awareness and Management Assessment Checklist for Individuals with Developmental Disabilities (MAMAC-IDD)

The MAMAC-IDD was developed and categorized into two sub-scales i.e., Money Awareness and Money Management.

The MAMAC-IDD was developed for assessment of and intervention of monetary skills among individuals with developmental disabilities for use with the Indian population. Herein, 7 dimensions were formulated under Money Awareness and 9 dimensions under Money Management.

The Money Awareness and Management Assessment Checklist for Individuals with Developmental Disabilities (MAMAC-IDD) is developed to assess monetary skill level of money awareness and management for children with developmental disabilities involving money identification, organizing, counting, transacting, shopping and balance concepts. For assessment of monetary awareness and management, sub-domains and set of skills or items have been developed that can be used for assessment as well as giving intervention in the various sub-domains of the checklist. In view of non-availability of a detailed, updated and comprehensive monetary skill assessment checklist for use with individuals with developmental disabilities in India, the MAMAC-IDD was developed. The MAMAC-IDD can be used by special educators, occupational therapists, psychologists, behavior therapists, paediatrics, child development trainers, teachers and other allied professionals working with individuals with developmental disabilities. The checklist will be able to guide them to assess and to plan for interventions, skill development for this population.

Dimensions of the checklist:

Money Awareness:

1. Money Identification: Herein, an individual with developmental disability is assessed on basic understanding of money, being able to differentiate coins and notes from other metal and paper objects, respectively, as well as identify various coins and notes and the symbol for rupee.
2. Organizing Amount: Herein, an individual with developmental disability is assessed on the ability to organize the money placed in front of him/her, such that when asked for an amount, they are able to identify, calculate and give it to the administrator in single denominations, and then multiple denominations.
3. Counting Amount: Herein, an individual with developmental disability is assessed on the ability to count the total amount of money an administrator gives to them and correctly tell them the total amount, in single denominations, and then multiple denominations.
4. Money Transaction: Herein, an individual with developmental disability is assessed on the ability to transact using a particular amount where the administrator asks the individual to transact for a particular amount and the individual calculates and gives the administrator the required amount only, in single denominations then multiple denominations.

Money Awareness:

1. Mock Shopping: Herein, the individual with developmental disability is assessed on the ability to identify of shopping items from a list and picking the items from a variety of items placed in front of them and collecting said items.
2. Price Tag Reading: Herein, the individual with developmental disability is assessed on the ability to read and identify price tags of items of various amounts.
3. Mock Shopping without Monetary Calculation using Exact Tender: Herein, the individual with developmental disability is assessed on the ability to carry out the process of shopping for different amounts.
4. Mock Shopping with Monetary Calculations: Herein, the individual with developmental disability is assessed on the ability to carry out the full process of shopping with calculations set up on mock basis where the administrator acts as a shopkeeper for items of different amounts using single denomination, then multiple denomination.
5. Actual Shopping with Monetary Calculations: Herein, the individual with developmental disability is assessed on the ability to carry out the full process of shopping with calculations in an actual shop for items of different amounts using single denomination, then multiple denomination.
6. Balance Money Concept: Herein, the individual with developmental disability is assessed on the ability to calculate and give balance to the administrator of different amounts.

Scoring:

- A child will be scored on each skill on a score of 0 or 1.
- A score of 0 will be given if the child is unable to do the task independently.
- A score of 1 will be given if the child is able to the task independently (this requires the child to be able to do the task without any type of prompting).
- The scores of each domain will be summed to provide a total score for monetary awareness as well as monetary management, and a final overall score.

III. Results

Table 1. All individuals with developmental disabilities

Dimensions	Mean	SD
Money Identification	14.25	2.88
Organizing Amount - Single Denomination	10.52	8.20
Organizing Amount - Multiple Denominations	6.25	8.65
Counting Amount - Single Denominations	10.36	8.52
Counting Amount - Multiple Denominations	5.86	8.78
Money Transaction - Single Denomination	9.07	8.59
Money Transaction - Multiple Denomination	5.52	7.83
Money Awareness Total	61.84	48.77
Mock Shopping	8.41	2.49
Price tag reading	2.68	3.08
Mock Shopping without Monetary Calculations with exact tender	5.29	2.91
Mock Shopping with Monetary Calculations using single denomination	5.43	4.31
Mock Shopping with Monetary Calculations using multiple denomination	3.52	4.41
Actual Shopping without Money Calculations with exact tender	4.36	3.91
Actual Shopping with Monetary Calculations using single denomination	3.61	4.39
Actual Shopping with Monetary Calculations using multiple denominations	1.98	3.76
Balance Money Concept	2.09	2.84
Money Management Total	37.39	27.16

N=44 individuals with developmental disabilities

Table 2. Females with DD

Dimensions	Mean	SD
Money Identification	14.25	2.09
Organizing Amount - Single Denomination	12.17	9.01
Organizing Amount - Multiple Denominations	8.25	9.49
Counting Amount - Single Denominations	10.67	10.34
Counting Amount - Multiple Denominations	7.83	10.34
Money Transaction - Single Denomination	9.50	9.03
Money Transaction - Multiple Denomination	7.25	8.88
Money Awareness Total	69.92	55.43
Mock Shopping	7.67	2.61
Price tag reading	2.83	3.19
Mock Shopping without Monetary Calculations with exact tender	5.75	2.49
Mock Shopping with Monetary Calculations using single denomination	5.92	4.25
Mock Shopping with Monetary Calculations using multiple denomination	3.75	4.92
Actual Shopping without Money Calculations with exact tender	5.17	3.69
Actual Shopping with Monetary Calculations using single denomination	4.33	4.94
Actual Shopping with Monetary Calculations using multiple denominations	1.75	3.02
Balance Money Concept	1.67	2.81
Money Management Total	38.83	27.40

N=44 individuals with developmental disabilities

Table 3. Males with DD

Dimensions	Mean	SD
Money Identification	14.25	3.15
Organizing Amount - Single Denomination	9.91	7.94
Organizing Amount - Multiple Denominations	5.50	8.35
Counting Amount - Single Denominations	10.25	7.91
Counting Amount - Multiple Denominations	5.13	8.17
Money Transaction - Single Denomination	8.91	8.56
Money Transaction - Multiple Denomination	4.88	7.44
Money Awareness Total	58.81	46.63
Mock Shopping	8.69	2.43
Price tag reading	2.63	3.09
Mock Shopping without Monetary Calculations with exact tender	5.13	3.07
Mock Shopping with Monetary Calculations using single denomination	5.25	4.38
Mock Shopping with Monetary Calculations using multiple denomination	3.44	4.28

Actual Shopping without Money Calculations with exact tender	4.06	4.01
Actual Shopping with Monetary Calculations using single denomination	3.34	4.22
Actual Shopping with Monetary Calculations using multiple denominations	2.06	4.05
Balance Money Concept	2.25	2.87
Money Management Total	36.84	27.50

N=44 individuals with developmental disabilities

IV. Conclusions & Discussions

The total Monetary Awareness and Management score among individuals with developmental disabilities was found to be M=61.84 (SD=48.77) and M=37.39 (SD=27.16). Money Identification was found to be the highest among the sample probably due to ease of the items at M=14.25 (SD=2.88), followed by Organizing Amount - Single Denomination at M=10.52 (SD=8.20); followed by Counting Amount - Single Denomination at M=10.36 (SD=8.52), then Money Transaction - Single Denomination at M=9.07 (SD=8.59), then Mock Shopping at M=8.41 (SD=2.49), then Organizing Amount - Multiple Denominations at M=6.25 (SD=8.65), then Counting Amount - Multiple Denominations at M=5.86 (SD=8.78), then Money Transaction - Multiple Denomination at M=5.52 (SD=7.83), then Mock Shopping with Monetary Calculations using single denomination at M=5.43 (SD=4.31), then Mock Shopping without Monetary Calculations with exact tender at M=5.29 (SD=2.91), then Actual Shopping without Money Calculations with exact tender at M=4.36 (SD=3.91), then Mock Shopping with Monetary Calculations using multiple denomination at M=3.52 (SD=4.41), then Actual Shopping with Monetary Calculations using single denomination at M=3.61 (SD=4.39), then Price tag Reading at M=2.68 (SD=3.08), then Balance Money Concept at M=2.09 (SD=2.84), and lastly, Actual Shopping with Monetary Calculations using multiple denominations at M=1.98 (SD=3.76) among individuals with developmental disabilities.

It was found that females with developmental disabilities had higher Money Awareness (M=69.92, SD=55.43) than males with developmental disabilities (M=58.81, SD=46.63), as well as females had higher Money Management (M=38.83, SD=27.40) than males (M=36.84, SD=27.50).

The MAMAC-IDD helps identify the level of monetary skills including awareness and management level among individuals with developmental disabilities and moreover, the items can be used as an intervention strategy to increase the skill level of the individual in the domains where they obtain a low score, as the MAMAC-IDD is an assessment and intervention checklist. It is further recommended to build on this study by using it as an assessment and progress checklist in collaboration with appropriate interventions. The study will be accompanied with upcoming reliability and validity tests to standardize the checklist and make it available for use among caregivers, educators, and healthcare professionals involved in the care and support of individuals with developmental disabilities.

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