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VALIDITY AND RELIABILITY STUDY OF METACOGNITIVE KNOWLEDGE INTERVIEW FORM (MCKI) FOR 3-5 YEAR CHILDREN

Research article

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Abstract

This study was conducted to analyse the validity and reliability of the Metacognitive Knowledge Interview Form (McKI) for 3-5 year old children. The study was designed in the general survey model, one of the quantitative research. The study group consists of 310 children in the 3-5 age group attending kindergartens affiliated to the Ministry of National Education in Konya City Centre in the 2019-2020 academic year. Metacognitive Knowledge Interview Form (McKI) and General Information Form were used to collect the research data. Content validity (expert opinion) and construct validity (confirmative factor analysis) were examined for validity studies of the test. Cronbach's alpha coefficient was calculated for the reliability of the measurements in terms of internal consistency, and Pearson correlation coefficient was calculated for independent inter-observer agreement and test-retest reliability. The analyses revealed that the Metacognitive Knowledge Form (McKI) is a valid and reliable test for 3-5 year old children.

Keywords: Preschool, Metacognition, Metacognitive Knowledge, Metacognitive Knowledge Interview Form (McKI)

1. Introduction

While metacognition can be seen as an individual's self-instructions on how to do a particular learning activity or task, cognition is the way of actually doing them. Metacognition then returns as monitoring the success of these activities (Muijs & Bokhove, 2020). Metacognition refers to one's control over knowledge and field cognition. There are two main problems with the concept of metacognition: the difficulty in distinguishing what is meta- and what is cognitive and the difference in the historical origins of the metacognition research field. However, metacognition is thought to have 4 basic historical sources. The first of these is the knowledge of verbal statements as data stating what can be expressed about the known or how the things that can be expressed are related to the known. Knowledge of verbal statements as data is the evidence for determining what the child knows, when s/he knows, and how s/he knows. The second is the executive control concept in information processing models consisting of executive systems including planning, evaluating, monitoring and revising. The third historical source is self-regulation by which actions are managed and regulations are made. The last historical source is the transfer from other regulations or self-regulation. This transfer refers to the formation and encouragement of the opportunity to learn in the presence of the activity of others, that is, the order in which the supportive people guide the individual (Brown et al., 1982).

Metacognition is a comprehensive and multidimensional structure. The components that make up metacognition also work in interaction (Allen & Armour Thomas, 1993). Efklides

(2006) suggests that metacognition has two aspects: monitoring and control. The monitoring aspect consists of metacognitive knowledge and metacognitive experience, while the control aspect consists of metacognitive skills. Metacognitive experience includes functions such as emotions, judgements/predictions, task characteristics, applied procedures. Metacognitive knowledge includes functions such as person, task, strategy, theory of mind. Metacognitive skills include functions such as the use of conscious, deliberate activities and strategies, planning, control and regulation of cognitive processing, and evaluation of the process result.

Metacognition provides cognitive ability to evaluate individuals' learning, knowledge and experiences (Metcalf, 2008). Metacognition refers not only to individuals' cognitive processes, but also to their awareness and control of their emotions and motivations (Papaleontiou Louca, 2003). Monitoring prior learning is a basic metacognitive process. If people cannot accurately discriminate between what they know and what they do not know, it is unlikely that they will engage in advanced metacognitive activities such as realistically assessing their learning or making plans for effective control of this learning (Tobias & Everson, 2002).

Metacognition is related to the processes by which individuals monitor and control their own cognitive processes. Metacognition has implicit and explicit forms. Implicit means automatically and without awareness. Implicit metacognition is the consideration of the knowledge and intentions of others automatically. The content of explicit metacognition is highly sensitive to social factors. Explicit metacognition enables behaviours to be projected onto others. It is also claimed that explicit metacognition is a unique human ability that develops through the development of collaborative decision-making (Frith, 2012).

Metacognition can also be divided into individual and social metacognition. While individual metacognition consists of monitoring and controlling one's own knowledge, emotions and actions, social metacognition consists of group members monitoring and controlling each other's knowledge, emotions and actions. Social metacognition distributes metacognitive responsibilities among group members, makes metacognition visible to facilitate learning and improves individual cognitive processes. By doing so, it helps group members to identify errors, build shared knowledge and keep group members motivated. Social metacognition also reduces the difficulties of inadequate metacognitive resources, inaccurate self-evaluations, misallocation of cognitive resources, inappropriate choice of solution strategy, or misuse of feedback (Chiu & Kuo, 2009, p.117).

People's cultural environment has a profound influence on the way they think about themselves. Cultural differences in how the self is defined and how the self functions in relation to the social environment also affect metacognitive processes about the self (Demarree & Rios Morrison, 2012, p.109).

Asking questions is one of the primary tools by which individuals can develop their own understanding. Therefore, it is accepted as a powerful metacognitive activity. However, before asking a question, individuals need to understand the basic tool and goal relationship between the concept of question and answering. Before the reading skill is acquired, the ability to ask and answer questions is important. However, after the acquisition of reading skills, it is also necessary to answer and understand the questions about the text and to learn the underlying cognitive processes. The questions asked by children in the text-based question and answer practice are also crucial in terms of revealing what they consider important. In this case, the child can expect the answer to his/her question from the adult or he/she can answer it by himself/herself. Such activities also facilitate comprehension of the text (Gavelek & Raphael, 1985).

Another accepted view is that metacognitive development can be both a cause and a consequence of cognitive growth. The fact that social interaction is generally believed to be an important mediator of cognitive development and the role of social factors are focused on in promoting metacognitive development supports this view. The potentially important role of the home environment, which is one of the social factors in promoting metacognitive development, should not be ignored. Direct teaching of metacognitive skills during formal and informal interactions between parents and children rarely occurs. However, it is also recognised that metacognition is typically fostered through observational learning and apprenticeship in everyday experiences rather than direct teaching. However, it may be more beneficial for children if parents play a more active role in facilitating metacognitive development. This role should not simply involve direct instruction or modelling, it should also include providing opportunities for the child to build their own metacognitive understanding through independent activities. Another important social factor in the development process of the individual is the teacher. Therefore, the most powerful and promising path for change is at the level of teacher education. Paying more attention to metacognition in teacher training may affect metacognitive development of children (Baker, 1994).

Early theory of mind competences also affect the acquisition of metacognitive vocabulary (e.g., knowledge about mental words such as guessing or knowing), which in turn affects developmental changes in metacognitive knowledge (Schneider & Löffler, 2016). Theory of mind and metacognition are broad and multidimensional structures. To fully understand the developmental connections between metacognition and theory of mind competences and to determine their causal relationship, researchers need to explore the development of different aspects of metacognition and theory of mind (Misailidi, 2010).

Metacognition is a fundamental component of self-directed and self-regulated learning. There are many forms of metacognition that can be used in academic learning and daily life. However, since not all students develop and use metacognition spontaneously, teachers need to provide students with explicit instruction in both metacognitive knowledge and metacognitive strategies. The most important point is that students can develop voluntary control over their own learning through the practice of self-regulation. Teachers can improve students' awareness and control over learning by teaching them to reflect on how they think, learn, remember and perform academic tasks at all stages before, during and after task execution. Finally, and most importantly, teachers should repeatedly emphasise and demonstrate through actions that students are responsible for and in control of their own outcomes in their education and daily lives (Hartman, 2001, p.63).

Metacognition also enables the individual to be a successful student. Metacognition refers to high-level thinking that includes active control over cognitive processes related to learning, and encompasses activities such as planning how to approach a particular learning task, monitoring comprehension, and evaluating progress for the completion of a task. Since metacognition plays a critical role in successful learning, it is important to develop metacognition in students, and for this, teachers, parents, and students themselves must develop the metacognitive environment at school or at home. Metacognitive awareness enables learners to self-reflect on their own cognition processes in order to observe, monitor, evaluate and regulate their own thought processes that occur during learning. Students who are aware of their own cognition or thought processes are more responsible for their own learning processes. Talking about thinking, keeping a thought diary, determining "what you know" and "what you don't know", planning, self-regulation and self-evaluation are some effective practices to improve students' metacognition (Zulkipli, 2009).



Young children refer not only to the obvious behavior or physiological characteristics of people, but also to their mental and subjective life. Therefore, their statements are accepted as evidence that they form a metacognitive understanding of their own and others' mental worlds. They do not equate mental states with observable or objective states and they also evaluate their internal and mental characteristics (Sodian et al., 2012).

Infants' metacognitive experiences of seeing (and not seeing) at about 2 years of age show that they make inferences about another person's visual experience from their own visual experience. Metacognitive linguistic input is crucial for children's developing understanding of mental states. Children also discriminate conversations about mental state terms at about 3 years of age. Conversations about mental state terms provide children with metacognitive knowledge. Children's mental state conversation with family members includes indicative mental state reasoning towards others, which can help them recognise and explore the other person's perspective (Sodian et al., 2012).

Experimental research shows that 4-year-old children exhibit metacognitive knowledge and strategies in interpretation. Age-related differences in metacognitive knowledge and strategies may be related to differences in the ability to identify cognitive and metacognitive processes. The results obtained in experimental studies include data that even young children have and use metacognitive strategies when interpreting, and that the choice of metacognitive strategies depends on both the developmental level of the interpreter and the assessment method used (Williams & Atkins, 2009, pp. 30-32).

The development of metacognitive activity depends on the size and nature of knowledge. Metacognitive development also includes the formation of mental processes, impressions, memory, thinking and imagination. Education also plays a leading role in preparing children for school based on metacognitive techniques, because metacognitive issues are addressed in the learning process. Education includes the consistent education of children, the development and systematization of this knowledge, cognitive processes and intellectual activity. Education contributes to the development of traits, curiosity, attention and criticality. In the learning process, children should be taught the basics of learning activities and the necessary conditions should be created for successful school. At the end of the preschool age, children gain the most basic knowledge and understanding of the environment, and master the basic thinking and preparation for school. A full mental development can only be achieved through well-organised activities. Therefore, the main duty of educators is to create the necessary conditions for the child to have a purpose and educational impact (Hamidovna, 2020).

Participation in metacognitive thinking is considered essential as they seem to be able to develop basic forms of metacognition after the age of 3. The development of metacognitive skills helps young children to be thoughtful about their learning processes. Specifically, the implementation of interesting activities in a fun way that develop young children's higher-order thinking skills can help them develop their metacognitive skills and become effective learners. Metacognition is a very important concept related to the acquisition of learning skills and knowledge transfer, as children can use it more flexibly and in new learning areas. Young children who use metacognitive abilities and behaviors learn and remember more efficiently than others and become more strategic, flexible and productive in their learning processes. Therefore, teachers need to help children develop metacognitive awareness from early childhood. In addition, when young children participate in fun tasks, their metacognitive capacity increases (Chatzipanteli, Grammatikopoulos, & Gregoriadis, 2014).

Young children's social pretend play develops gradually during the preschool years, and its most complex form requires the use of a range of advanced representational and metacognitive skills. Metacommunication allows players to create the play framework, communicate how to

interpret behavior within the framework, and manage any subsequent changes to that framework. Metacommunication is particularly important for the development of metacognitive and self-regulation skills, which are crucial for children's success as learners in school. Social pretend play, in particular, offers a means by which metacognition and self-regulation can be supported both within and outside the play framework, if implemented effectively (Whitebread & O'Sullivan, 2012).

Metacognition is also affected by goals, information about control processes and related constraints (Van Overschelde, 2008). In order to facilitate the development of metacognitive skills, an understanding that includes the harmony of teams, tools and abilities along the developmental line is needed. In particular, tools and team provide a supportive relationship that facilitates purposeful self-regulation and metacognitive control in learning processes (Hogan et al., 2014).

1.1. Components of Metacognition

1.1.1. Meta-comprehension skill (meta-comprehension)

Metacognition refers to the individual's knowledge of his/her own cognitive processes or knowledge, such as thinking and learning activities. This definition extends beyond the awareness of an individual's cognitive processes, i.e. self-awareness, to the deliberate and conscious control of these cognitive actions, i.e. self-control. As in metacognition, metacomprehension skill generally requires awareness of the interaction between the person, task and strategy and the nature of materials. Therefore, metacomprehension skill can be defined as the awareness of one's level of understanding during reading and the ability to exercise conscious control over cognitive actions during reading by applying strategies to facilitate comprehension of a particular text type. Metacomprehension skill also addresses the ability of individuals to adjust their cognitive activities in order to promote more effective understanding (Gordon & Braun, 1985).

1.1.2. Metacognitive knowledge

Metacognitive knowledge includes information about how the mind works in general (Reeder, Rexhepi-Johansson, & Til Wykes, 2010). Metacognitive knowledge can also be seen as a part of the theory of mind regarding the attribution of mental states (e.g. intentions, beliefs, and desires) to oneself (metacognitive knowledge) and other people (Kloo & Rohwer, 2012). Metacognitive knowledge basically consists of knowledge or beliefs about the ways in which factors or variables that affect the course and outcome of cognitive attempts act and interact. These factors or variables are divided into 3 main categories: person, task and strategy. The person category encompasses everything an individual can believe about himself/herself and the nature of other people as cognitive processors. The task category relates to information presented during a cognitive attempt. This information may be too much or insufficient, familiar or unfamiliar, redundant or densely collected, well or poorly organized, interesting or boring, reliable or unreliable. The strategy category, on the other hand, is related to information about which strategies will be effective in achieving which goals and sub-goals in which type of cognitive attempts (Flavell, 1979).

3 basic questions are focused on when determining whether a child uses metacognitive knowledge. These are whether there is evidence that the individual monitors or regulates his/her cognitive performance, whether such activities facilitate his/her performance, and whether he/she participates in metacognitive activities in more than one environment. In order to determine the effect of metacognitive knowledge activity on performance, it is necessary to



compare the individual's behaviors within themselves (Rogoff, 1982, cited in Gavelek & Raphael, 1985).

Metacognitive knowledge is the understanding of the meaning of diversity in terms of how best to manage cognitive attempt and how successful one can be in achieving the goal (Flavell, 1979). It also refers to the knowledge about memory, comprehension and learning processes that an individual can verbalise. Metacognitive knowledge includes information about the strengths and weaknesses of one's own memory and learning, the cognitive requirements of tasks (i.e. their complexity and difficulty), as well as the ways and means of achieving cognitive learning and achievement goals (Händel, Artelt, & Weinert, 2013). In short, metacognitive knowledge is explicit and factual knowledge about how the mind works (Van Overschelde, 2008).

1.1.3. Metacognitive experience

Metacognitive experiences are short or long-term, simple or complex in content. These experiences can occur at any time before, after or during a cognitive intervention. Metacognitive experience is also related to where one is in an intervention and what kind of progress is being made. Some metacognitive experiences are best described as elements of metacognitive knowledge embedded in consciousness. For example, when dealing with a difficult problem, remembering similar problems that were previously solved makes it easier to solve the new problem. Metacognitive experiences have very important effects on cognitive goals, metacognitive knowledge and strategies. The first of these effects is the setting of new goals and the revision of old ones. Second, metacognitive experiences can affect metacognitive knowledge by revising, adding to, or eliminating it. Finally, metacognitive experiences can activate two types of goal-oriented strategies, cognitive or metacognitive (Flavell, 1979).

Metacognitive experiences accompany the ease or difficulty of remembering and generating thoughts, fluent processing of new information and logical thinking. The exact conclusion people draw from their metacognitive experiences depends on their pure theories of memory and cognition, that is, their assumptions about what makes it easier or harder to think about certain things or process new information (Schwarz, 2004).

1.1.4. Metacognitive judgment

Metacognitive experiences related to the ease or difficulty of generating and retrieving thoughts affect judgements in a wide range of areas. These experiences provide information and characterise outcomes. It is suggested that judgements are a joint function of thought content and accompanying metacognitive experiences. Because metacognitive experiences are used as a source of information (Sanna & Lundberg, 2012).

Metacognitive judgments refer to one of three different classes of judgments about one's learning and performance, labeled as prospective, concurrent, and retrospective judgments, to indicate when judgment is made regarding the focal performance task. Prospective judgements (ie, predictions) require the examinee to make a judgment about learning or performance before performing the criterion task. Concurrent judgments require the examinee to make judgments about confidence or performance in performing the task. Concurrent judgments also refer to ongoing learning or performance assessments. These include judgments of confidence (ie, confidence in learning or performance), ease of solution and judgments of performance accuracy during an ongoing task. Retrospective judgments require the examinee to judge the ease of learning or performance after completing a study phase or test. Retrospective judgments are also holistic in nature (Schraw, 2009, p.416-417).

There are three general approaches to the foundations of metacognitive judgments: The direct access approach, the knowledge-based approach, and the experience-based approach.

The direct access approach is perhaps best represented in epistemology by the rationalist philosophers' claims that facts are based on intuition and deduction, and that their certainty is evident. In knowledge-based approaches, metacognitive judgments are assumed to be based on analytical inference, in which various ideas retrieved from long-term memory are consulted and weighed to reach an educated metacognitive judgement. Experience-based approaches focus on the contribution of mnemonic cues derived from task performance. In summary, these three approaches related to the basis of metacognitive judgments reflect different aspects of the processes underlying judgments. Although these approaches imply qualitatively different processes, there is a great deal of overlap in their predictions (Koriat, 2012).

1.1.5. Metacognitive awareness

Metacognitive awareness includes the individual's knowledge of himself/herself and the strategies s/he uses to cope with the tasks (Fisher, 1998). Metacognitive awareness consists of two components: regulation of cognition and knowledge of cognition (Kallio, Virta, & Kallio, 2018). Knowledge of cognition refers to what a person knows about cognition and is thought to include three sub-components. First, declarative knowledge includes the individuals' self-knowledge as learners and what factors influence their performance. Procedural knowledge refers to knowledge about strategies and other procedures. Finally, conditional knowledge includes knowledge of why and when to use a particular strategy. Individuals with a high degree of conditional knowledge can better evaluate the demands of a particular learning situation and in turn choose the most appropriate strategies for this situation (Schraw, Crippen, & Hartley, 2006). Regulation of cognition includes five sub-components that facilitate the process: planning, knowledge management strategies, monitoring, debugging strategies, and evaluation (Schraw & Dennison, 1994). Planning includes selecting appropriate strategies, setting goals, activating relevant background information and planning time. Monitoring includes the necessary self-testing skills to control learning. Evaluation refers to the individual's evaluation of learning products and regulatory processes, re-evaluation of goals, revision of predictions, and reinforcing intellectual achievements (Schraw, Crippen, & Hartley, 2006).

2. Method

2.1. Study Group

The study group consists of a total of 310 children in the 3-5 age group, attending preschools and kindergartens affiliated to the Ministry of National Education in Konya city centre, and their mothers. Sample size is estimated based on relative criteria such as the number of items or factors. For factor analysis, the sample size is reported to be 100=poor, 200=adequate, 300=good, 500=very good, and 1000 and above= excellent. Bryman and Cramer's recommendation for sample size is to apply as much as the number obtained by multiplying the number of items by 5 or 10 (Çokluk et al. 2018). Therefore, in this study, the sample was determined as 310 people, based on 5 times the number of items.

2.2. Data Collection Tools

In the study, the Validity and Reliability Study of the Metacognitive Information Interview Form (McKI) for 3-5 Year-old Turkish Children was conducted. In addition, a general information form was used to obtain information about the demographic characteristics of the participants.

2.2.1. General information form

In the study, the "General Information Form" prepared by the researcher was used to determine the demographic characteristics of children in the 3-5 age group and their parents. This form consists of multiple-choice questions about the child's gender, date of birth, birth order, number of siblings, duration of preschool attendance, socio-economic level of the family, age of the parents, education level of the parents, occupation of the parents, working status of the parents.

2.2.2. Metacognitive knowledge interview form (McKI)

The interview form developed by Marulis et al. (2016) to examine the metacognitive knowledge of 3-5-year-old children consists of 2 parts. The first part includes the Wedgits Building Blocks set task. In this task, pictures of Wedgits blocks and 4 structures made with these blocks should be prepared for the children before the application starts. First, the children are shown the first picture, they are asked to do it within 4 minutes, and if they can do it, they move on to the next picture. When it cannot be done within the given time, it is terminated and the second part is started. The second part consists of the Metacognitive Knowledge Interview Form (McKI). There are 15 questions in this form and the questions are conveyed to the children through a puppet. The answers given by the child are evaluated over 0, 1 and 2 points. Between 0-15 points are considered partially metacognitive; 15 points and above are considered fully metacognitive.

2.3. Data Collection

In the study, data were collected by face-to-face and individual interviews with children and their mothers using data collection tools.

2.4. Analysis of Data

Rstudio (2022.07.1) interface of R programming language was used for the validity and reliability evidence of McKI Scale. In the analyses performed with the "lavaan" package (Rosseel, 2012), WLSMV (weighted least square means and variances) was preferred as the estimation method since the data were sequential. Content validity (expert opinion) and construct validity (confirmative factor analysis) were examined for validity studies of the test. For content validity, the test was sent to 5 academicians, 1 with a doctorate degree in guidance and psychological counselling and 4 with a doctorate degree in child development and education, and expert opinions were obtained in terms of the suitability of the items for the relevant age group and developmental area and the appropriateness of the way the items were presented. Cronbach's alpha coefficient was calculated for the reliability of the measurements in terms of internal consistency, and Pearson's correlation coefficient was calculated for independent inter-observer reliability and test-retest reliability.

2.5. Ethics Committee Approval

Ethics committee approval of KTO Karatay University Non-Pharmaceutical and Non-Medical Device Research Ethics Committee dated 18/06/2019 and numbered 41901325-050.99 was obtained for the study. Research and publication ethics were complied with.

3. Results

For the expert evaluations of the Schultz Test of Emotion Processing – Preliminary Version (STEP-P), whose validity-reliability analyzes were conducted for 3-5 year old children, expert opinions were obtained from 5 academicians, 1 with a doctorate degree in guidance and psychological counselling and 4 with a doctorate degree in child development and education. All experts reported that the items in the scale are necessary and appropriate. Therefore, all items in the original form were used in the data collection process.

Rstudio (2022.07.1) interface of R programming language was used for validity and reliability evidence of McKI Scale. In the analyses performed with the "lavaan" package (Rosseel, 2012), WLSMV (weighted least square means and variances) was preferred as the estimation method, since the data were sequential. Cronbach's alpha coefficient was calculated for the reliability of the measurements in terms of internal consistency and Pearson correlation coefficient was calculated for test-retest reliability.

For the construct validity of the McKI Scale, Confirmatory Factor Analysis was conducted with the data obtained from each scale. Limit values in CFA analysis (Schumacker & Lomax, 2004; Hu & Bentler, 1999; Thompson, 2004; Kline 2015) were evaluated according to Table 1.

Table 1. *Limit Values in CFA Analysis*

Indices	Limit Values
χ^2 / sd	Excellent $\leq 3 \leq$ Good ≤ 5
RMSEA	Excellent $\leq 0.05 \leq$ Good $\leq 0,08$
SRMR	Excellent $\leq 0.05 \leq$ Good $\leq 0,08$
CFI	Excellent $\geq 0.95 \geq$ Good $\geq 0,90$
NNFI	Excellent $\geq 0.95 \geq$ Good $\geq 0,90$
GFI	Excellent $\geq 0.95 \geq$ Good $\geq 0,90$
AGFI	Excellent $\geq 0.95 \geq$ Good $\geq 0,90$

Since RMSEA and SRMR values were 0.11 and CFI and TLI values were 0.90 in the CFA results for construct validity with 15 items in the scale, model fit indices were improved by modifying two item pairs. After modification, $\chi^2/sd=2.38$; RMSEA = 0.07; SRMR = 0.08; CFI = 0.97; TLI = 0.96. Therefore, it can be said that the model-data fit is at a good level. The model tested with the modification made in items M14 and M15, M9 and M10 is as follows.

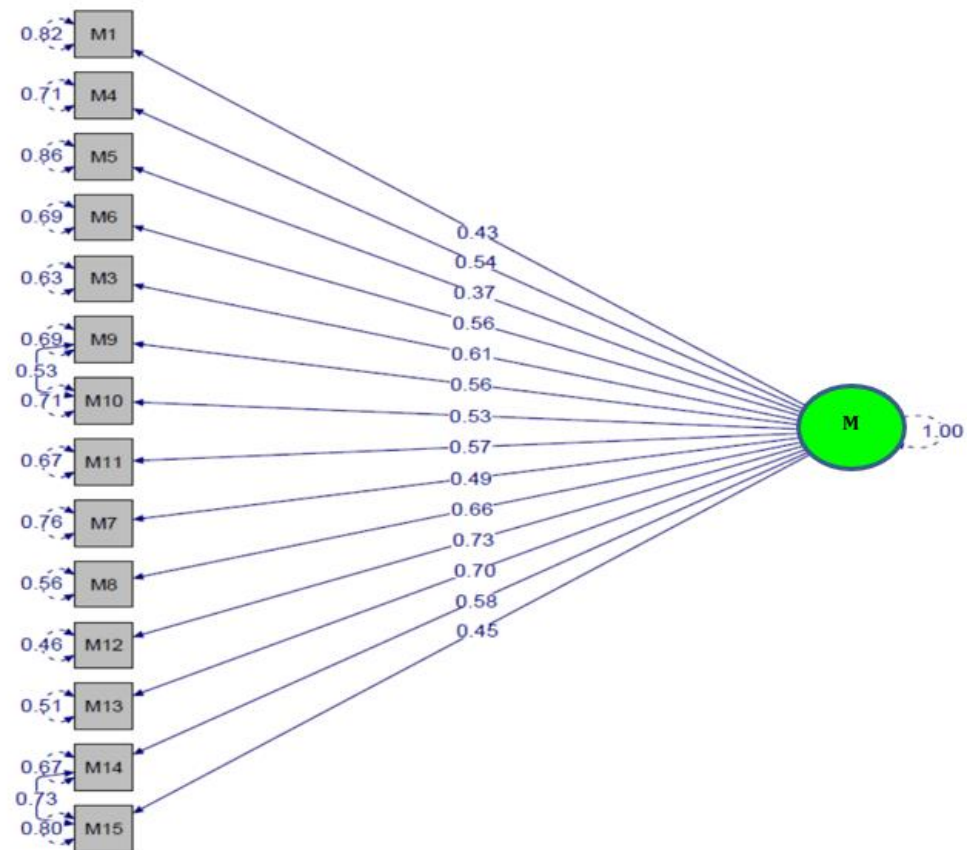


Figure 1. CFA Results for McKI Scale (Standard Coefficients)

When Figure 1 is analysed, it is seen that the factor loads are between 0.37 and 0.73. According to the total score obtained from the scale, descriptive statistics for the scores ranging from 1 to 28 are as follows: The mean is 14.50 and standard deviation is 5.54., skewness is -0.28 (SH:0.31) and kurtosis is -0.57 (SH:0.31). The Cronbach's alpha coefficient calculated for the reliability of the measurements obtained with 15 items and 310 people using the scale is 0.81, independent inter-observer reliability is 0.99, and test-retest reliability is 0.72. Therefore, it can be said that the reliability of the measurements in terms of both internal consistency and stability is high. Descriptive statistics of the measurements obtained with McKI are given in Table 2.

Table 2. Descriptive Statistics of Scores Obtained with McKI

	Number of Items	Min	Max	Mean	Standard Deviation	Skewness Shç: 0.138	Kurtosis Shb: 0.276
McKI	15	1	28	14.50	5.54	-0.28	-0.57

When Table 2 is analysed, it is seen that the minimum score is 1, the maximum score is 28 and the mean score is 14.50. In addition, standard deviation is 5.54, skewness value is 0.138 and kurtosis value is -0.57.

4. Conclusion and Recommendations

The study aims to adapt the Metacognitive Knowledge Interview Form (McKI) into Turkish and to conduct validity and reliability analyses for 3-5 year old children. In this context, content validity (expert opinion) and construct validity (confirmatory factor analysis) were examined for the validity studies of the test. For content validity, the test was sent to 5 academicians, 1 with a doctorate degree in guidance and psychological counselling and 4 with a doctorate degree in child development and education, and expert opinions were obtained in terms of the suitability of the items to the relevant age group and developmental area and the appropriateness of the way the items were presented. All experts reported that the items in the scale are necessary and appropriate. Therefore, all items in the original form were used in the data collection process. Cronbach's alpha coefficient was calculated for the reliability of the Metacognitive Knowledge Interview Form (McKI) in terms of internal consistency, and Pearson correlation coefficient was calculated for independent inter-observer reliability and test-retest reliability. The Cronbach's Alpha coefficient of the adapted Metacognitive Knowledge Interview Form (McKI) was calculated as 0.81. According to Karagöz (2019), a Cronbach's Alpha coefficient of 0.80 and above indicates a highly reliable scale. Independent inter-observer reliability was 0.99 and test-retest reliability was 0.72. Pearson's correlation coefficient between 0.70 and 0.89 indicates a high-level relationship, while between 0.90 and 1.00 indicates a very high-level relationship (Alpar, 2022, p. 444). As a result of the analyses, it was determined that the Metacognitive Knowledge Interview Form (McKI) is a valid and reliable measurement tool for 3-5 year old children. In line with the results obtained in this study, it is thought that the application of the scale in a larger sample may positively affect the validity and reliability levels of the scale.

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