

Content Validation of a Checklist to Evaluate Therapists' Competency in Delivering Magic Tricks

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Abstract

The aim of this study is to describe the development and content validation of a magic performance evaluation checklist. Content validation process consisted of two stages. Stage 1 was item generation and stage 2 was item evaluation where 16 professional magicians evaluated items generated from stage 1 for relevance. In Stage 2, each magician independently rated the relevance of each item in the checklist. A content validity index was used to determine the percentage of agreement among the ratings. Stage 1 resulted in a 5-item checklist which included essential skills needed to perform magic. Each item was rated on a three-point scale. The scale content validity index of the checklist was 0.99, which was well above the set criterion of 0.8. Content of the magic performance evaluation checklist was considered relevant to evaluate the ability of rehabilitation therapists to demonstrate magic tricks which provides a benchmark of competency for them to teach magic tricks to children.

Keywords: Magic Tricks; Content Validity; Teaching; Rehabilitation Therapists

1. Introduction

Magic, a form of performing art, has been used as a therapeutic modality since early 1980s (Lam, Lam, & Chawla, 2017; Spencer, 2013). Children with disabilities have been shown to benefit from participating in learning and performing simple magic tricks (Spencer, 2012). Rehabilitation therapists have incorporated teaching magic as therapeutic activities for these children (Spencer, 2013). A recent scoping review (Lam et al., 2017) revealed that magic arts have been used

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clinically to improve upper limb function in children with motor disorders through repetitive action of practicing the magic tricks (Green et al., 2013), enhance interpersonal and communication skills of children with autism through development of appropriate social interaction skills (Spencer, 2012), improve psychosocial health of children with developmental disabilities through enhancement of self-esteem and self-confidence (Ezell & Klein-Ezell, 2003), and improve cognitive skills through planning and sequencing in executing magic tricks (Spencer, 2012).

2. Literature Review

Performing a magic trick is not simply about knowing the secret or executing the moves. Learners are required to utilize and integrate a variety of skills that result in a masterful performance to create the desired illusion (Lyons & Menolotto, 1990; Rissanen, Pitkanen, Juvonen, Kuhn, & Hakkarainen, 2014). The learner may be able to verbalize the secret of the trick and correctly execute the moves required to create “the magic”; however, it is also important for the learner to develop his/her performance skills, enabling him/her to enhance the presentation and capture the attention of the audience (Lyons & Menolotto, 1990; Rissanen et al., 2014). Therefore, learning magic tricks demands (1) motor skills to perform the trick (2) communication skills to explain the trick, (3) social skills to engage the audience, (4) cognitive skills including memory, sequencing and judgment, and (5) creativity and adaptability according to specific conditions (Spencer, 2012).

Teaching magic to children with disabilities requires a significant time commitment. Most professional magicians either do not have access or cannot afford to volunteer their time to teach these children on a regular basis. Training rehabilitation therapists to teach children with disabilities simple magic tricks is feasible. However, before teaching magic tricks to their clients, rehabilitation therapists themselves must learn the tricks and be skilled in their delivery. In order to ensure rehabilitation therapists are competent to teach magic tricks to their clients, rehabilitation therapists need to achieve a certain level of proficiency in delivering the magic tricks. Currently, no assessment tool exists to evaluate rehabilitation therapists’ skills to deliver magic. The purpose of this study is to develop an evaluation checklist of magic trick performance skills for rehabilitation therapists. An important step for the development of this checklist is to validate the content of the checklist. The process involves seeking professional magicians’ opinion to establish the content validity for the performance evaluation checklist.

3. Method

3.1. Study Design

The study used a cross-sectional survey research design to establish the content validity of a performance checklist to evaluate rehabilitation therapists’ competency in delivering magic tricks. Content validation was completed using a two-stage process: Stage 1 is item generation and Stage 2 was item evaluation. The Institutional Review Board of the University XXX approved the study.

Stage 1: Item Generation

A magic performance evaluation checklist was generated by the first author to evaluate the rehabilitation therapists’ competency in delivering magic tricks. Items generation for the checklist was based on the first author’s practice and teaching experience of magic, as well as recommended principles of magic delivery in the literature (Lyons & Menolotto, 1990; Rissanen et al., 2014). The

author has more than 35 years of experience in performing magic arts and has taught magic to children with various disabilities for more than 20 years. The checklist consisted of 5 items which included essential skills to perform magic. Each item was rated on a three-point scale with 2 = Pass; 1 = Borderline; 0 = Fail. A rehabilitation therapist received either a borderline or a fail score on an item that needs to be retrained and reevaluated. The checklist was slightly modified and endorsed by the second author whose expertise is in psychological instrument development. The items in the checklist were then evaluated by a panel of professional magicians in stage 2.

Stage 2: Item Evaluation

Participants

Twenty professional magicians were recruited to participate in this stage to evaluate the items on the magic performance competency evaluation checklist. These magicians were selected by the first author from the database of the two largest organizations dedicated to the art of magic -- the Society of American Magicians and the International Brotherhood of Magicians. These organizations represent approximately 7,500 individuals. Since the recommended number of judges / raters for content validation was within ten, the first author selected 20 magicians from the database and invited them to participate in the study. All 20 magicians are acquaintances of the first author.

Procedures

The purpose of this stage was to assess the relevance of each of the five items on the newly created performance checklist to evaluate rehabilitation therapists' competency in delivering magic tricks. A cover letter explaining the purpose of the study with the performance checklist and a short survey was sent to 20 professional magicians via e-mail that requested them to evaluate the relevance of the five items in the checklist. The survey consisted of six questions that sought descriptive information regarding magicians' demographic information (gender, city and country of residency) and professional background (magic training background, years of experience as a magician and teaching magic experience). Completion and submission of the evaluation checklist and the survey back to the investigative team indicated consent for participation in this study.

Magician respondents (i.e., panel members) were requested to independently rate the relevance of each of the five items in the magic performance evaluation checklist using a four-point rating scale: 1 = not relevant, 2 = unable to assess relevance without major revision, 3 = relevant but needs minor alteration, and 4 = very relevant and succinct. Panel members were encouraged to highlight words or portions of the item descriptions that were unclear and use the comment column to suggest alternate phrasing. Panel members were also asked to appraise the rating scale for the checklist including the number of response options and verbal qualifiers.

Data Analysis

The data were analyzed for item relevance by determining the percentage of agreement among the ratings of the magician respondents using the content validity index (CVI) (Lynn, 1986). The formula to compute the CVI for item relevance was: the number of experts giving a rating of 3 or 4, divided by the number of magicians in the panel. The criterion to retain an item was set at 80% which required 13 of the 16 magician respondents to provide a rating of 3 or 4 on the item (i.e., $\text{item-CVI} \geq .80$).

4. Results

The response rate was 80%. The sixteen magician respondents were from various geographical regions in the United State: Northeast (1) Midwest (5) South (6) and West (3), as well as one from

Canada. The mean and standard deviation (SD) years of the panel's work experience as a magician was 31 ± 13.5 years, median = 35 years (range: 6 to 50 years). Eleven (69%) of them were male, 13 (81%) learned magic through self-taught, and the same number of magician participants reported that they received some informal mentoring such as from other magicians, and/or learning magic tricks in conventions and/or club meetings; and half of them also reported to receive some formal training such as attending (online) courses. Fourteen (88%) had some experience in teaching magic, and their years of experience in teaching magic ranged from none (1 respondent), a few months to 27.5 years (with the mean and SD = 7 ± 9 years, median = 3 years).

Main findings

Using the $CVI \geq .80$ criterion, the scale-CVI of the magic performance evaluation checklist, which is the average of the item-CVI of the 5 items (Polit, Beck, & Owen, 2007), was .99; four items achieved unanimous agreement ($CVI = 1$), item 3 had a CVI of .94 (see Table 1). The panel members also provided suggestions, though minimum, on the wording of the items and the rating scale or response options of the checklist. For example, one participant suggested adding the phrase "in a natural way" at the end of the item 3 statement.

Table 1 Item evaluation of the magic performance evaluation checklist by professional magician participants (n=16)

Items	Task	No. of members given a rating of 4	CVI
1	The rehabilitation therapist recalls the sequential steps without delay.	13 (81%)	1
2	The rehabilitation therapist performs each step correctly.	14 (88%)	1
3	The rehabilitation therapist performs each step smoothly.	11 (69%)	.94
4	The rehabilitation therapist performs the magic trick without exposing the secret.	13 (81%)	1
5	The rehabilitation therapist presents the trick with some finesse.	14 (88%)	1

CVI = Content Validity Index

5. Discussion and Implications

This study employed a two-stage process to establish the content validity of the magic performance evaluation checklist. The process used professional magicians to review the checklist to establish the veracity of its content. The checklist achieved an excellent scale-CVI value of .99. The number of judges (i.e., magicians) used to establish content validity for the magic performance evaluation checklist exceeded the 10 recommended in the literature (Lynn, 1986). Several participants commented on the rating scale or response options and verbal qualifiers of the checklist. They pointed out that the intent of this checklist was to evaluate magic delivery competency of the rehabilitation therapists who teach children magic tricks, and these rehabilitation therapists were not professional magicians; therefore, even if they achieved a borderline in items 3

and 5, it would not affect their competency to teach magic. However, the counter argument was that it is essential for the rehabilitation therapists to display competency in these two areas (i.e., items) to earn the respect of the student. After considering all comments, it was decided to keep the rating scale as it was originally developed. The diversity of the magician participants in terms of gender, professional and teaching magic experiences, as well as broad range of geographic location, make this sample more likely to be representative of the whole magician population.

The findings of this study have the following implications for magic training practice of rehabilitation therapists who wish to use this activity as a therapeutic modality:

- The five items in the magic performance evaluation checklist reflect essential skills that rehabilitation therapists should achieve before teaching their pediatric clients.
- Preliminary evidence supporting the content validity of the checklist confirms that the content is suitable to evaluate the rehabilitation therapists' competency in delivering magic tricks.

One limitation of the study was that the process of content validation did not include a pilot testing stage in which professional magicians observe rehabilitation therapists deliver the magic tricks and evaluate their competency. However, construct validation of the checklist is underway which aims to establish the psychometric properties of the magic performance evaluation checklist, which will involve inter-rater reliability, factor analysis to evaluate the structure validity to ensure the items in the checklist are consistent with those originally envisaged in the content validation phase.

6. Conclusion

This study used professional magicians' input and review to establish the content validity of the magic performance checklist for evaluating the rehabilitation therapists' competency in delivering magic tricks. The 5-item checklist included essential skills needed to perform magic, and each item was rated on a three-point scale. The scale content validity index of the checklist was 0.99, which is deemed to be excellent. In conclusion, content of the magic performance evaluation checklist was considered relevant to evaluate the ability of rehabilitation therapists to demonstrate magic tricks which provides a benchmark of competency for them to teach magic tricks to children.

Key findings:

- Preliminary evidence supporting the content validity of the magic performance evaluation checklist which is used to evaluate the rehabilitation therapists' competency in delivering magic tricks.

What the study has added:

Develop an instrument to evaluate the rehabilitation therapists' competency in delivering magic tricks.

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