

Construct Validity of the Children's Music-Related Behavior Questionnaire

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Abstract

The purpose of this research was to investigate the construct validity of the Children's Music-Related Behavior Questionnaire (CMRBQ), an instrument designed for parents to document music-related behaviors about their children and themselves. The research problem was to examine the hypothesized factorial structure of the questionnaire. From a national sample, parents of children 5 years old or younger returned 616 usable questionnaires. Items were parceled, and the model was subjected to a confirmatory factor analysis to assess the goodness of model-data fit for a one-factor solution using the parcels as indicators. Internal consistency of subscale reliability estimates ranged from $\alpha = .77$ to $\alpha = .97$. Three multiple fit indices suggested that the one-factor model adequately fit the data: standardized root square residual (.028), comparative fit index (.968), and Tucker-Lewis index (.955). Greater knowledge regarding parents' observations of music's role in children's development may help researchers, practitioners, parents, and policy makers collaboratively consider how best to meet musical needs of young children in childcare and school settings.

Keywords

parents, questionnaire, music behaviors, young children, factor analysis

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Since the last half of the 20th century, music researchers and practitioners have increased their focus on music education relative to young children (Overland & Reynolds, 2010; Persellin, 2007; Quill, 2010). Researchers from many countries have designed rich investigations from qualitative and quantitative perspectives. They have shed light on how adults view the importance of music in children's lives, ways children are musical, and how children interact musically with others. Parents, guardians, early childhood teachers, and children from diverse cultures are continuing to contribute to the profession's multifaceted considerations for developmentally appropriate and culturally relevant early childhood music education. Scholars have continued to focus on learning more about young children's music behaviors as representative of music development (e.g., Campbell & Scott-Kassner, 2010; Gordon, 2003; Moog, 1976; Moorhead & Pond, 1978; Petzold, 1963; Rainbow, 1981; Rutkowski, 1990; Whiteman, 2005; Young, 2003).

Parents and primary guardians are in a unique position of having the first opportunities to observe music development and interact musically with their children. As such, they have provided information to which researchers typically lack in-depth access. For example, researchers have learned from parents that parents believe their use of music with their young children may achieve value beyond entertainment, helping them to pass along cherished traditions; enhance and encourage social bonding; accompany daily routines; and promote young children's self-regulation, language acquisition, and music achievement (Adessi, 2009; Barrett, 2009; Berger & Cooper, 2003; Bergeson & Trehub, 1999; Calissendorff, 2006; Custodero, Britto, & Brooks-Gunn, 2003; Custodero, Britto, & Xin, 2002; Custodero & Johnson-Green, 2003, 2008; Dai & Schader, 2001; de Vries, 2009; Gibson, 2009; Gratier, 1999; Hendricks & McPherson, 2010; Koops, 2011; Lum, 2009; Papousek, 1996; Robb, 1999; Summa-Chadwick, 2009; Trehub, 1999; Trehub et al., 1997; Valerio, Sy, Gruber, & Stockman, 2011; Yazejian & Peisner-Feinberg, 2009; Youm, 2008). Researchers who study child development have found that parents are able to document children's cognitive, physical, language, social, and emotional development reliably.¹ Researchers who study music development—particularly music behaviors in relation to the age of the child—have relied on parents' observations (Custodero, Britto, & Brooks-Gunn, 2003; Custodero, Britto, & Xin 2002; Custodero & Johnson-Green, 2003, 2008; Trehub et al., 1997) but have lacked a tool to collect information from parents in generalizable and relatively inexpensive ways.

In fall 2007, we (Valerio and Reynolds) began to design such a tool. We extensively combed quantitative and qualitative music research to collect young children's music behaviors as well as activities that parents use with their children.² We intuitively grouped behaviors and activities into categories, which became the names of subscales on the Children's Music-Related Behavior Questionnaire (CMRBQ). The collection of behaviors and activities served as the focus for the construction of CMRBQ items. In spring 2008, two colleagues with expertise in survey design and research advised us as we assembled a paper version of the questionnaire.

In May 2008, with permission from our respective Institutional Review Board (IRB) committees, we piloted the CMRBQ with focus groups of parents who commented

on the addition, deletion, or revision of items. After revisions based on parents' feedback, the CMRBQ comprised three parts: Demographics, Part 1 (children's music-related behaviors), and Part 2 (activities that parents/guardians use with their children). Parts 1 and 2 comprised a total of eight subscales with each subscale hypothesized to measure a single dimension labeled *music-related behaviors, as documented by parents about their children and themselves*. Part 1 included seven subscales: Attention & Emotion (8 items), Vocalizations (10 items), Moving (10 items), Daily Routines (10 items), Requests (12 items), Taking Turns—Initiating—Sharing (11 items), and Creativity (8 items). At the end of Part 1, space was provided for participants to list additional music behaviors that should be included in additional questionnaire items. Part 2 included one subscale, with 29 items. Items in Parts 1 and 2 offered a 4-point Likert-type response scale (*never, rarely, sometimes, and frequently*) with an additional *I don't know* option for Part 1 items. Examples of items from Part 1 and Part 2 are shown in Figures 1 and 2, respectively.³

In June 2008, we (Valerio, Reynolds, Grego, Yap, & McNair, 2011) conducted a preliminary study with 249 respondents from a localized geographic region of the country, primarily to learn whether parents could use the CMRBQ reliably to document their children's music behaviors and activities they use with them. We also wanted to learn whether their level of music activity affected their documentation of music behaviors. Internal consistency on each CMRBQ subscale ranged from moderately high ($\alpha = .71$) to high ($\alpha = .92$). Because so few participants used the opportunity to list additional behaviors that they believed should be included in the questionnaire, that information was not analyzed. In general, (1) parents who reported using the most music activities with their children also reported that their children performed more music behaviors than did other parents; (2) parents who reported using a moderate number of music activities with their children reported that their children performed fewer music behaviors than did parents of other children, primarily during ages 1 and 2; and (3) parent reports indicated that older children performed more music behaviors than did younger children (Valerio et al., 2011).

Initial evidence of parents' ability to document music behaviors reliably using the CMRBQ was limited by the sample size and the narrow geographic region represented by respondents in that study. We identified the need to increase the number and broaden the potential scope of the respondents in the current study. With the intent of learning more about the psychometric properties of the CMRBQ, the purpose of this research was to investigate its construct validity. The research problem was to examine the hypothesized factorial structure of the CMRBQ.

Method

Instrumentation and Questionnaire Administration

Prior to administration for the current study, we deleted two items from the CMRBQ Attention & Emotion subscale that were worded confusingly. We also deleted the opportunity for parents to list additional behaviors that should be

MY CHILD		Never	Rarely	Sometimes	Frequently	I don't know
A. Attention & Emotion		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	Turns his/her head toward me when I sing songs or chant rhythms/rhymes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Pauses activities to listen to me when I sing songs or chant rhythm/rhymes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Vocalizations						
9.	Makes different types of vocal play sounds (for example: glissandos, raspberries, shouts, screams, shrieks, lip smacks, tongue clicks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Accurately performs recognizable songs/rhythms/rhymes alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Moving						
26.	Uses blocks, sticks, toys, or kitchen utensils to play rhythms or keep the beat of music recordings or music performed by others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	Performs traditional movements to traditional songs or rhythms/rhymes such as <i>The Itsy Bitsy Spider</i> or <i>Peas Porridge Hot</i> , etc., but not quite accurately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Daily Routines						
33.	Sings songs or chants rhythms/rhymes with me before going to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36.	Sings songs or chants rhythms/rhymes with me while bathing or dressing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Requests						
42.	Asks for favorite songs or rhythms/rhymes to be performed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45.	Asks me to sing or perform rhythms/rhymes with him/her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. Taking Turns, Initiating, Sharing						
54.	Takes turns making music conversations with me using pitches and/or rhythms and words	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60.	Initiates music conversations with me using pitches and/or rhythms and nonsense syllables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. Creativity						
62.	Creates songs or rhythms/rhymes by himself/herself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66.	Sings or performs original or different words to familiar songs or rhythms/rhymes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 1. Sample questionnaire items from Part I: Child Music Behaviors

I		Never	Rarely	Sometimes	Frequently
1.	Sing songs or perform rhythms/rhymes for my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Make up songs or rhythms/rhymes using nonsense syllables for my child to listen to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Sing songs or chant rhythms/rhymes with my child during daily routines such as bathing, dressing, cleaning up toys, getting ready to go somewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Sing songs or perform rhythms/rhymes and leave out a note or phrase to see what my child does	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Encourage my child to make up his/her own songs or rhythms/rhymes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Compliment my child's made-up songs or rhythms/rhymes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Play recorded music for my child in the house or car when he/she is awake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Dance around with my child while I sing songs or perform rhythms/rhymes for my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	Attend early childhood music classes with my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	Accompany myself on a musical instrument while I sing for my child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 2. Sample questionnaire items from Part 2: Parent Music Activities

included in the questionnaire, due to lack of responses to this item in the initial study. Then, we prepared the questionnaire on the Internet using SurveyMonkey[®] and in hard copy.

In fall 2009, after attaining IRB permission from our universities, we began the study. Over approximately 3 months (September 23–December 31, 2009), we advertised the opportunity for childcare center directors to invite parents to participate voluntarily in the study via *Exchange*, a nationally distributed paper-copy journal, and its accompanying website and text message advertising service (http://ccie.com/media_kit/web_ads.php). We provided written descriptions of the study and consent process, inviting parents of children 5 years old or younger to complete voluntarily one questionnaire about each of their children or one about their youngest child. Using a university-sponsored research grant, we offered childcare centers an incentive of a \$5 credit per completed, returned questionnaire, with a cap of 40 questionnaires (\$200 credit) per center, toward the purchase of music-related products from a nationally prominent vendor, West Music Company. The researchers reported to the vendor the dollar amount earned by each participating childcare center. Then the vendor issued a

voucher for the appropriate amount earned by each childcare center to the researchers, who mailed the vouchers to the childcare centers.

Participants

On the first page of the survey, participants were informed that their decision to participate was voluntary and that their information would be kept confidential. Participants returned 629 questionnaires. Missing data were excluded listwise, resulting in a sample comprising 616 records. Demographic information for the participants ($N = 616$), and for the children on whom their responses were based, is presented in Tables 1 and 2, respectively. The majority were Caucasian females from the southern, western, or midwestern United States. Most had achieved a bachelor's degree and reported an annual income of \$85,999 or lower. The mean age of children on whom

Table 1. Demographic Information Describing Questionnaire Participants

	<i>n</i>	%
Ethnicity		
Caucasian	421	68.3
African American	81	13.1
Hispanic/Latino	53	8.6
Asian	40	6.5
American Indian	6	1.0
Italian/German	2	0.3
Other	2	0.3
Biracial	1	0.2
Missing	10	1.6
Education		
High school or below	200	32.5
Associate's degree	111	18.0
Bachelor's degree	168	27.3
Master's degree or higher	128	20.8
Missing	9	1.5
Income		
\$13,999 or lower	72	11.7
\$14,000–\$49,999	182	29.5
\$50,000–\$85,999	143	23.2
\$86,000 or higher	200	32.5
Missing	19	3.1
Region		
Northeast	56	9.1
South	287	46.4
West	150	22.6
Midwest	136	22.1

Table 2. Demographic Information Describing Children

	<i>n</i>	%
Gender		
Female	280	45.5
Male	330	53.6
Missing	6	1.0
Ethnicity		
Caucasian	403	65.4
African American	84	13.6
Hispanic/Latino	52	8.4
Asian	32	5.2
Other	24	3.9
Biracial	9	1.5
American Indian	8	1.3
Italian/German	2	0.3
Missing	2	0.3
Birth order		
First	338	54.9
Second	163	26.5
Third	75	12.2
Fourth	21	3.4
Fifth or later	10	1.7
Missing	8	1.3

questionnaire responses were based was 3.56 years ($SD = 1.40$), and the majority of children about whom parents reported were first-born, Caucasian males.

Twenty-seven parents/guardians reported for two children. Two parents/guardians reported for three children. Based on cursory inspection, each questionnaire submitted by a parent/guardian for multiple children was completed with regard to each individual child's music behaviors.

Analysis

To examine the factorial structure of the CMRBQ, we hypothesized that data collected by each CMRBQ subscale would measure the single dimension, music-related behaviors as documented by parents about their children and themselves. Data were screened for normality. Investigators used the 98 items from Parts 1 and 2 of the CMRBQ and created item parcels using subscale means.

The model was subjected to confirmatory factor analysis (CFA) to assess the goodness of model-data fit for a one-factor solution (Garson, 2010). Maximum likelihood estimation (MLE) was used to estimate the model parameters. The metric was established by setting the factor variance equal to one (1). To assess the appropriateness of model-data fit, multiple fit indices were examined as recommended by Bollen (1989)

and Schumacker and Lomax (2004). For this study, the fit indices included χ^2 , root mean square error of approximation (RMSEA), standardized root square residual (SRMR), comparative fit index (CFI), and the Tucker-Lewis index (TLI).

Results

Descriptive statistics and internal consistency for subscales as measured by Cronbach's alpha are presented in Table 3. Reliability estimates for CMRBQ subscales ranged from moderately high ($\alpha = .77$) to high ($\alpha = .97$), similar to those in the initial study (Valerio et al., 2011). Parcel 1 (Attention & Emotion) was slightly negatively skewed, with a skewness statistic of -1.76 . The kurtosis statistic for the first parcel suggested that it had fewer cases in the tails of the distribution. Neither skewness nor kurtosis for any parcel exceeded the acceptable bound of $|2.0|$ for skewness and $|5.0|$ for kurtosis. That is, each parcel met normal distribution criteria necessary for further investigation.

All estimates for parcel loadings and uniqueness were statistically significant ($p < .05$), and the completely standardized solution is presented in Table 4. The loading estimates can be interpreted as the correlation between the item parcel and the construct, music-related behaviors, as documented by parents about their children and themselves. That is, a higher loading indicates a stronger relationship between each parcel and underlying music-related behaviors construct. The parcel based on the Requests subscale items had the strongest relationship with the construct ($\lambda = .90$), and the parcel based on the Attention & Emotion subscale items had the weakest relationship with the construct ($\lambda = .54$). Parents may have found that children displayed behaviors listed in the Attention & Emotion subscale less obviously or less consistently than behaviors listed in the other subscales, causing that subscale to have the weakest relationship with the underlying construct. The uniqueness estimates reflect how much variability is explained by factors beyond what the researchers were able to include in the study. Therefore, parcels with high loading estimates are expected to have lower uniqueness estimates because the construct is explaining most of the variability. The opposite

Table 3. Descriptive Statistics for Each Item Parcel

Item Parcel	Number of Items	Mean	SD	Skewness	Kurtosis	Reliability (α)
1. Attention & Emotion	8	3.56	0.47	-1.76	4.53	.772
2. Vocalizations	10	3.24	0.64	-1.11	0.96	.834
3. Moving	10	3.26	0.62	-1.53	2.93	.865
4. Daily Routines	10	2.67	0.68	-0.01	-0.56	.836
5. Requests	12	2.93	0.76	-0.88	0.20	.909
6. Taking Turns	11	2.90	0.73	-0.57	-0.12	.880
7. Creativity	8	2.76	0.81	-0.52	-0.47	.894
8. Parent Music Activities	29	2.80	0.58	-0.27	0.21	.969

Table 4. Loading and Uniqueness Estimates From Completely Standardized Solution

Item Parcel	Loading Estimate	Uniqueness Estimate
1. Attention & Emotion	.54	.71
2. Vocalizations	.79	.37
3. Moving	.82	.32
4. Daily Routines	.77	.42
5. Requests	.90	.19
6. Taking Turns	.88	.22
7. Creativity	.86	.26
8. Parent Music Activities	.71	.41

would be expected for parcels with very low loadings. In this analysis, all loadings were statistically significant, which suggests that all parcels have relationships with the construct.

When testing CFA models, researchers first examine the data using a χ^2 test. In this study, the χ^2 test was significant, $\chi^2(20, N = 616) = 140.20, p < .001$, indicating that the model does not fit the data. Schumacker and Lomax (2004) cautioned, however, “the χ^2 test for model fit can lead to erroneous conclusions regarding analysis outcomes” (p. 100). Therefore, careful interpretation of the χ^2 statistic is warranted. Specifically, as sample sizes increase, the χ^2 statistic tends to yield statistically significant results (Bollen, 1989). The significant χ^2 test of model fit is likely related to the sample size in this study. To further test the model, we examined four fit indices: RMSEA, SRMR, CFI, and TLI, each of which provides slightly different information about model adequacy (Bollen, 1989; Schumacker & Lomax, 2004).

Root mean square error of approximation represents the closeness of fit. Values up to .05 are considered indicative of good model-data fit, and values up to .08 indicate adequate model-data fit. In this study, the RMSEA for the model was estimated to be .099 ($CI_{90} = 0.084, 0.115$), which extended beyond the upper limit of good model-data fit. The SRMR indicates the average error left unaccounted. Generally, a value less than .05 is considered acceptable, and the SRMR for this model was .028. The model tested met the CFI and TLI minimum cutoffs of .95 for good model fit (CFI = .968, TLI = .955). Although the estimate of RMSEA extended beyond the boundary of typically acceptable model fit, CFI, TLI, and SRMR indicated that the model adequately fit the data. That is, each of the CMRBQ subscales uniquely measured a dimension of music-related behaviors as documented by parents about their children and themselves.

The modification indices included in the model output display the expected change in the χ^2 value if the relationships between certain variables are estimated. In other words, modification indices show how much specific changes to the model would improve the χ^2 value. Statistical improvements in model-data fit in terms of lower χ^2 values (i.e., improvement in model fit) may be made by allowing the error terms of item parcels to be correlated. The correlations between item parcels were not tested in

this study because the relationships between item parcels were explained by the underlying construct. Thus, the potential model modifications noted reflect statistical improvements, not substantive improvements.

Discussion

To our knowledge, the CMRBQ is the only parent-completed questionnaire designed for gathering information regarding music-related behaviors that parents observe their young children performing and music activities that parents use with their children. This study represents the first examination of the construct validity of the CMRBQ using CFA with a relatively large sample of participants. Because the internal consistency for most subscales is high and, overall, the one-factor model adequately fits the data from this sample, researchers may continue to use the CMRBQ with confidence to gain information from parents.

Although we advertised the opportunity for participation in this study nationally and offered a monetary incentive to childcare centers, we desire a more diverse participant population. Increased and varied advertising, perhaps at a different time of year, and increased monetary incentives paid directly to participants might encourage a more diverse population to complete and submit the questionnaire. Researchers should continue to seek samples representing parents and children from diverse geographic areas, incomes, and ethnicities and those with nonmusic special needs as they continue to investigate the CMRBQ.

Future studies of the reliability (e.g., test–retest reliability), validity (e.g., concurrent validity), and psychometric properties of the CMRBQ could increase understandings about its generalizability. For example, researchers could determine if the CMRBQ may be used to identify children’s music-related behaviors with regard to age groups or examine latent class characteristics of the CMRBQ to determine otherwise unobserved groupings within the data (Hagenaars & McCutcheon, 2002). Those groupings may reveal relationships between how parents observe and document their children’s music behaviors and music activities that they use with their children. With such information, researchers may begin to examine relationships between music-related behaviors measured by the CMRBQ and nonmusic child development behaviors using measures such as Ages & Stages Questionnaires (Squires & Bricker, 2009), Ages & Stages Questionnaires: Social-Emotional (Squires, Bricker, & Twombly, 2002), Batelle Developmental Inventory (Newborg, 2004), Bayley Scales of Infant and Toddler Development (Bayley, 2005), Child Development Review (Ireton, 1992), and Parents’ Evaluation of Developmental Status (Glascoe, 2006).

There has been a call for improved dialogue among early childhood researchers and practitioners to increase children’s “access to the highest-quality musical experiences” (Persellin, 2007, p. 59), especially for the approximately 53% of children 3 and 4 years old who attend childcare programs in the United States (Snyder & Dillow, 2010). Parents’ voices are virtually absent from such dialogues. Continuing to add parents’

systematic observations about their children's music-related behaviors and music activities that they use with their children could broaden the profession's understanding of the dynamic nature of music development and offers one way to feature parents' voices. Greater knowledge regarding parents' observations of music's role in children's development may help researchers, practitioners, parents, and policy makers collaboratively consider how best to meet musical needs of young children in child-care and school settings.

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Notes

1. Studies in which researchers have investigated parents' documentation of their children's development: Bae, 2007; Barrett, 2009; Bodnarchuk & Eaton, 2004; Bricker, Squires, Kaminski, & Mounts, 1988; Glascoe, 1998, 2002, 2006; Glascoe & Dworkin, 1995; Henderson & Meisels, 1994; Ireton, 1992, 1996; Ireton & Glascoe, 1995; Newborg, 2004; Pool, 2008; Skellern, Rogers, & O'Callaghan, 2001; Squires & Bricker, 2009; Squires, Bricker, Heo, & Twombly, 2001; Squires, Bricker, & Potter, 1997; Squires, Bricker, & Twombly, 2002; Suen, Logan, Neisworth, & Bagnato, 1995.
2. Valerio, Reynold, Grego, Yap, and McNair (2011) includes a bibliography of sources consulted during the construction of the CMRBQ.
3. Flesch-Kincaid readability scores generated by Microsoft Word 12.2.3 (Flesch Reading Ease [66.3], Flesch-Kincaid Grade Level of 7.1) indicated that parents with an education level of grade 7 or higher should be able to read and understand the questionnaire.

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