

A Validation of the Family Involvement Questionnaire-High School Version

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Abstract

The purpose of this study was to validate the Family Involvement Questionnaire (FIQ) for use in high school settings (9th-12th grade). After the FIQ was redesigned for use in the high school setting, 519 parents completed the questionnaire online. Internal consistency for the 40-item questionnaire was high ($\alpha = 0.93$). A confirmatory factor analysis failed to substantiate the FIQ-HS to the elementary version from which it was adapted. However, an exploratory factor analysis yielded three factors consistent with the FIQ-E. Family demographics were compared to participant responses, and significant effects of students' school and special education status were found.

Keywords: family involvement, high school, special education

1. Introduction

1.1 Family Involvement in High School

The discussion of family involvement in children's schooling has a significant history (Buchanan, Hansen, & Quilling, 1969). Buchanan et al. conducted one of the first studies examining the relationship between family involvement and student performance in the late 1960's. Since that time, educational laws in the United States have mandated the involvement of parents in their children's educational experiences with a succession of legal initiatives (EAHCA, 1975; IDEA, 2004; NCLB, 2001).

The first mandate specifically requiring parent involvement in schools was in 1975 with the Education for All Handicapped Children Act (EAHCA), requiring that schools consistently collaborate and communicate with families of children with disabilities. Likewise, the No Child Left Behind Act of 2001 (NCLB) outlines how schools should implement policies and structures to foster family involvement, including regular communication with parents on their children's academic progress and having parents partner with school officials when implementing and reviewing progress of family programs.

1.2 Research in Family Involvement

The factors and benefits of family involvement have been examined through over forty years of research, and multiple meta-analyses have been conducted to synthesize the data (Fan & Chen, 2001; Jeynes, 2005, 2007, 2012; Mattingly, Prislun, McKenzie, Rodriguez, & Kayzar, 2002). This body of research provides a firm basis to conclude that family involvement can have a positive effect on school children's achievement as measured by grades, standardized test scores, school enrollment, and high school graduation rates (Catsambis, 1988; Fan & Chen, 2001; Hill & Taylor, 2004; Jeynes, 2005).

In 2006, Appleseed completed an investigation of educational laws, policies, and practices and their impact on family involvement practices in schools. In this investigation, researchers interviewed educational leaders, community organizations, and school district staff. They also conducted parent focus groups and reviewed research on family involvement. Overall, the researchers concluded that schools do not accept family involvement as a main strategy for making academic gains, and current federal laws requiring parent involvement are not being followed by districts, likely because of a lack of understanding and support. Appleseed's report concluded that:

Too many parents fail to receive clear and timely information about their children and their schools. Poverty, limited English proficiency, and varying cultural expectations are among the biggest barriers to parental involvement. Poor communication with parents hinders their ability to exercise NCLB's choice and supplemental education services options. Creative, multi-faceted communication and engagement strategies can promote better parental involvement in schools. Parental involvement is not uniformly valued by school leaders as a key accountability strategy (p. 2).

Differences in family involvement between primary and secondary grade levels are apparent in both research and practice. For example, parent attendance rates at school functions typically decrease as students enter secondary grade levels. Researchers for the National Center for Education Statistics (2013) found that 89 percent of parents of kindergartners through fifth graders regularly attended parent-teacher conferences. That statistic dropped to 71 percent for parents of sixth through eighth graders, and dropped down to 57 percent attendance rate for parents of ninth through twelfth grade students.

Other differences between primary and secondary grades were found in this national household education survey (National Center for Education Statistics, 2013), including differences in parent participation in school, educational habits in the home, and parents' school satisfaction levels. The rate at which parents volunteered at school or served on school committees dropped significantly from primary grades to secondary grade levels. However, more parents reported meeting with a school counselor when their child was in secondary school versus when their child was in primary school. This suggests a shift in students' needs.

This survey also asked parents about their school-related parenting behaviors in the home setting and their satisfaction levels (National Center for Education Statistics, 2013). Parents reported high rates of ensuring their child had a place in their home for them to complete homework at all grade levels. However, parents of secondary students reported much lower rates of checking that their homework is complete than parents of primary students.

Parent satisfaction with their child's school and teachers also yielded significant differences. More parents reported that they were very satisfied with their child's teacher(s) if their child was in a primary grade, than if their child was in a secondary grade. More parents also reported that they were very satisfied with the way in which school staff interacts with parents when their child was in a primary grade, versus a secondary grade.

This apparent disconnect and change in attitude concurrent with entry into secondary school implies a change in the relationship between parents and schools occurring during the transition between primary and secondary school. It suggests that both the schools and the parents might be able to do a better job of meeting the needs of their students, and it implies that a mechanism for effectively monitoring family involvement at the secondary level might be very helpful.

1.3 Statement of the Problem

Literature on the effects of family involvement in school settings has focused primarily on early childhood and primary school settings (Fantuzzo, Tighe, & Childs, 2000; Manz, Fantuzzo, & Power, 2004; Waanders, Mendez, & Downer, 2007). This literature has established a firm base of knowledge that family involvement in schooling can positively impact students' school performance. However, significant differences in family involvement practices and behavior between primary and secondary grade levels are evident (National Center for Education Statistics, 2013). In that educational laws that mandate the involvement of families in the educational process cover all grade levels, it is important to have valid measures for assessing involvement in the lesser-studied secondary grade level. The current study will seek to validate the Family Involvement Questionnaire for use in the high school level (9th through 12th grades).

1.4 Research Questions

In order to validate the Family Involvement Questionnaire (FIQ) for the high school level, a sample was analyzed to establish the reliability and validity of the instrument. Additional analyses were conducted to examine demographic data with the instrument. These analyses were conducted to address three main research questions:

- 1) Does the FIQ-High School version demonstrate internal consistency?
- 2) What factors are associated with family involvement in high school settings?
- 3) Are the factors found in the FIQ-High School the same as the ones found in the FIQ-Elementary, including Home-School Communication, Home-Based Activities, and School-Based Activities factors?

2. Method and Procedure

The purpose of the present study was to validate the FIQ for use in high school settings by demonstrating reliability and validity of the instrument within a high school parent sample. This instrument was previously validated in early-childhood and elementary settings, but has yet to be used with families of high school students. The research questions this study addressed included: (1) Does the FIQ-High School version demonstrate internal consistency? (2) What factors are associated with family involvement in high school settings? And (3) Are the factors found in the FIQ-High School the same as the ones found in the FIQ-Elementary, including Home-School Communication, Home-Based Activities, and School-Based Activities factors?

2.1 Study Design and Overview

This study was a survey of family involvement with the intention of validating the Family Involvement Questionnaire (FIQ) in the high school setting. Parents of high school students completed the Family Involvement Questionnaire-High School (FIQ-HS) and a demographic questionnaire. Then the responses from each participant were reviewed and compiled for analysis to evaluate the reliability and validity of the FIQ-HS. Additional analyses to examine correlations between participants' FIQ-HS responses and family characteristics were also conducted. In addition to analyzing the samples data as a whole, individual analyses were conducted for each participating school site to provide specific feedback and recommendations.

2.2 Participants

The participants were parents of high school students whose teenager was currently enrolled in ninth through twelfth grade. Five hundred and seventeen parents were recruited from five high schools in the Midwest. They were 18 years of age or older, with a mean age of 45 ($M = 44.72$, $SD = 5.25$). Table 1 shows the indicated relationship of the participant to the high school student. Mothers were the predominant responders (79.70%) to the survey. The majority (96.10%) of participants indicated their family ethnicity as Caucasian or White (Table 2). A majority (87.23%) of participants indicated that their high school student was not receiving special education services (Table 3).

Table 1. Participant's relationship to high school student

Relationship	N	Percentage
Mother	412	79.70
Father	88	17.00
Step Parent	11	2.10
Grandparent	1	0.20
Aunt/Uncle	0	0.00
Foster Parent	0	0.00
Other	5	1.00

Table 2. Participant's family ethnicity

Racial Group/Ethnicity	N	Percentage
African-American	0	0.00
Asian or Pacific Islanders	3	0.60
Caucasian or White	497	96.10
Latino or Hispanic	6	1.20
Multiracial	5	1.00
Native American or Inuit	0	0.00
Other	4	0.80
No Ethnicity Indicated	2	0.30

Table 3. Participant's teenager receiving special education services

Response	N	Percentage
Yes	57	11.03
No	451	87.23
Unsure	9	1.74

Potential participants were recruited through email to participate in this study. Participants were directed to an informed consent webpage, which they are expected to read before they completed the study materials. Anonymous informed consent was utilized because the research involved little risk and included no procedures for which written consent is normally required. Participants' informed consent was implied when completed survey materials were returned to the researchers via an online survey system. Participants were not asked to provide any individually identifiable information (e.g., name, birthday, address) in the course of participating in this study.

2.3 Measures

Family Involvement Questionnaire: The Family Involvement Questionnaire-High School (FIQ-HS) is a 40-item scale designed to gather information about the nature and level of parents' participation in their teenager's school and academic work (Appendix). A primary caregiver of a high school student completes the FIQ-HS. The parent rates each item on a four-point Likert scale, representing the frequency of each item as it occurs within their family (Rarely, Sometimes, Often, or Always). The FIQ-HS takes approximately 10 to 15 minutes to complete.

The FIQ-HS is adapted from the Family Involvement Questionnaire-Elementary (FIQ-E) established by Manz, Fantuzzo, and Power in 2004. The FIQ-E was originally used with families of students in first through fifth grade. The items on the FIQ-E were examined to determine if they were appropriate for high school aged students in grades ninth through twelve. Researcher item examination was used to determine what items from the FIQ-E were applicable to high school aged students and what new items needed to be added to capture any unique family involvement aspect only seen at the high school level.

In the adaptation of the FIQ-HS 34 items were kept from the FIQ-E, and 11 items were removed because the behavior was not applicable to parents of high school students (e.g., I do creative activities with my child like singing, drawing, and story telling). Six new items were created for the FIQ-HS. These new items reflect transition-related parenting behaviors, including preparing their teenager for post-secondary education, employment, and independent living.

Additional changes were made to items on the FIQ-HS to make the measure more appropriate for the high school level. These changes included the word "teacher" being pluralized to address the fact that high school students typically have multiple teachers at any one point in time, and changing the word "child" to "teen" in the

items. Another significant change made to the FIQ-HS was that a directive was added to the beginning of the questionnaire directing parents to consider the multitude of educators that may not necessarily have the title of “teacher”, but serve as a school support for them or their teenager. Parents who also have younger children who were not yet in high school were also asked to only consider their 9th through 12th grade teenager when responding to items.

When the FIQ-E was developed for use with parents of children in primary school, three distinct factors emerged: Home-Based Involvement, Home-School Communication, and School-Based Involvement. Using these factors the researchers divided the 46 items into three scales representing each factor. It is anticipated that similar factor structures will emerge in the FIQ-HS, and three scales can be established.

Demographic questionnaire: Demographic variables were gathered to gain an understanding of the sample used in this study. Specifically, items addressed participants’ relationship to the student, age, ethnicity, and their teenager’s special education status and school of attendance. The demographic questionnaire is completed by a primary caregiver of a high school student and takes approximately 5 minutes to complete.

2.4 Procedures

To recruit potential participants, permission was first sought from individual school sites. High schools were recruited for their participation by contacting designated administrators, superintendents or principals. School consent was necessary to obtain contact information for high school parents. Once school consent was obtained, parents were then recruited to take part in the study. Five high schools in rural Minnesota signed permission and participated in this study.

School administrators were given the option of having parents contacted through postal mailings or email. All participating schools selected to have their parents contacted through email. School administrators were also given the option of releasing parent email addresses to the researchers and having them contact parents, or having the researchers provide the survey link to the school and they could disperse the link directly to parents. All participating schools choose to disperse the survey link directly to their parents. No parent contact data was released to the researchers. An example email to parents was provided to school administrators, they were able to use this example, modify it, or create their own message. All participating schools choose to use the example email provided.

When participants were contacted they received an email from their respective school administrator briefly explaining the study and providing the survey link. Participants who selected the link were taken to an online survey system (*Qualtrics*®). They were initially directed to the informed consent webpage. Informed consent was established when a participant selected the “Yes, I agree to participate in this study,” button at the bottom of the informed consent webpage and completed the FIQ-HS and demographic questionnaire. By submitting the completed questionnaires, the participant also indicated that they were at least 18 years of age and a parent of a high school student.

Participating parents completed the FIQ-HS and demographic questionnaire at a location of their choice, likely in their own home or place of work. Participants completed the questionnaires through a secured online survey website and their responses were stored in an online database that could only be accessed by the researchers.

Approximately two weeks after school administrators sent out their initial email to their parents, researchers informed each school of the number of completed surveys for their school. At this time, researchers recommended sending out one follow-up email to parents reminding them of the survey. All five participating schools sent out a follow-up email to parents.

After data collection was completed feedback reports for each participating schools were created. These feedback reports included data extracted from their own parents as well as data from the whole sample for comparison purposes. Data provided in the reports included: school demographics, performance by scales for school and sample, individual item mean and distribution by school and sample, and a strengths and weaknesses report. These feedback reports were distributed to school officials approximately one month after all data collection was completed.

3. Results

Data was analyzed in three ways. First, to establish the internal consistency of the FIQ-HS a Cronbach’s alpha reliability analysis was conducted. Second, to establish the construct validity of the instrument factor analyses were performed. Identified factors were examined for internal consistency and then compared to the FIQ-E. Lastly, relationships between family characteristics identified in the demographic questionnaire and

participants' responses to the FIQ-HS were analyzed using a MANOVA to determine what family characteristics were associated with more or less involvement.

3.1 Internal Consistency

A Cronbach's alpha was calculated on the 40 items within the FIQ-HS (Cronbach, 1951). The FIQ-HS yielded high internal consistency with a coefficient of 0.93.

3.2 Confirmatory Factor Analysis

A confirmatory factor analysis was conducted to examine the structural validity of the FIQ-HS across three constructs identified in the FIQ-E (Manz et al., 2004). Thirty-four items on the FIQ-HS were assigned to one of the three factors identified in the Manz et al. study. These 34 items were ones that were consistent with the FIQ-E version, with only minor wording changes made for the high school population. The confirmatory analysis indicated that the three-factor structure found in the FIQ-E is not applicable to the FIQ-HS using the current sample.

3.3 Exploratory Factor Analysis

Exploratory factor analyses were completed to identify constructs in the FIQ-HS. An orthogonal (varimax) rotation was conducted first, yielding three factors across 25 items. An oblique (promax) rotation was then conducted on the theoretical basis that the three-factor structure identified in the FIQ-E could have relationships with one another. By conducting the oblique rotation it allows for a small degree of correlation between factors, such as the home-school communication and school-based activities factors that were predicted. A three-factor solution was supported by both orthogonal and oblique rotations, with items loading consistently on the three factors across both methods. As the orthogonal method was used in previous validation studies of the FIQ this analysis will be used in further interpretation.

The factor structures were examined using the criteria established by McDermott (1993). Factors with eigenvalues of less than 1 were eliminated, factors that accounted for less than 5 percent of the total variance were eliminated, and factors with unacceptable internal consistency were also eliminated. After this process, a three-factor structure was supported by the exploratory factor analysis. The following dimensions were produced across 25 items: home-school communication, home-based activities, and school-based activities. The internal consistency of each factor was good to acceptable, with Cronbach's alpha coefficients of 0.89, 0.71, and 0.77, respectively (Cronbach, 1951). In total the three factors account for 31.67% of the variance, with the home-school communication factor accounting for 14.19%, the home-based activities factor accounting for 10.27% and the school-based involvement factor accounting for 7.20% of the variance.

The item content and factor loadings are presented in Table 4. Items with factor loadings of less than 0.40 were removed from their factor based on Stevens' (2006) recommendation. The home-school communication factor is comprised of 11 items reflecting various forms of contact parents might have with school staff, including communication behaviors such as talking with teachers about difficulties at school, accomplishments, and policies, and contacting the school for information. The home-based involvement factor is comprised of 9 items and includes activities parents perform outside of school that promote learning, such as talking with their teenager about careers and schooling, and helping their teenager with homework. The school-based involvement activities factor is comprised of 5 items that reflect parent behavior in the school setting, such as volunteering, and participating in family social activities at school or school fundraising activities.

Table 4. Factor loadings and item content of FIQ-HS

Factor/Items	Varimax Loadings
<i>Factor 1: Home-School Communication</i>	
Talk to staff when difficulties at school	0.75
Talk to staff about homework	0.73
Talk to staff when concerned about things teenager says	0.72
Talk with teachers through telephone or email	0.68
Talk to teachers about teenager's accomplishments	0.64
Talk to staff about preparing teenager for life after high school	0.64
Talk to staff about our personal matters if affects teenager at school	0.63
Talk to staff about disciplinary procedures	0.63
Talk to staff about school rules	0.62
Contact school to get information	0.60
Attend conferences to talk about teenager's learning and behavior	0.52
<i>Factor 2: Home-Based Activities</i>	
Talk to teenager about careers they are interested in	0.76
Talk to teenager about how school has helped them	0.68
Help teenager with academic skills they struggle with	0.60
Talk with teenager about life after high school	0.56
Provide assistance during homework	0.51
Talk about how teenager is doing in school to family/friends	0.46
Share stories with teenager about when they were in school	0.46
Encourage teenager to invite friends to home	0.44
Ensure teenager has resources to research post-secondary	0.40
<i>Factor 3: School-Based Activities</i>	
Participate in fundraising activities at school	0.74
Volunteer at school	0.71
Participate in community and family social activities at school	0.70
Talk with other parents about school meetings and events	0.63
Attend family-school associations meetings	0.43

In total, 25 of the 40 items on the FIQ-HS were identified across the three factors, with factor loadings of 0.40 or greater. There were 15 items that did not load onto any factor or did load with a factor loading of less than .40; these are listed in Table 5.

Table 5. FIQ-HS items that did not load onto any factor

Items
Limit teenager's TV watching or computer time
Ensure teenager completes homework
Suggest activities or trips to teachers
Ensure teenager has way to get to school in morning
Ensure teenager has quiet place to complete homework
Bring home learning or post-secondary materials for teenager
Maintain clear rules for teenager to obey
Ensure teenager has way to get home from school in afternoon
Talk to people at school about training opportunities for self
Teenager has chores to do at home
Feel teachers and principal encourage parents to be involved at school
Attend parent trainings offered by school
Ask teenager how day was at school
Teach teenager home-living skills
Feel parents in school support one another

3.4 FIQ-E and FIQ-HS Factor Analysis Comparison

Although the confirmatory factor analysis indicated the factors of the FIQ-E were inconsistent with the FIQ-HS, results of the exploratory factor analysis revealed similarities. First, the three constructs measured on the FIQ-E in Manz et al.'s study (2004) are consistent with those measured on the FIQ-HS (school-based involvement, home-based involvement, home-school communication). A difference is that 40 items loaded onto the three factors in the Manz et al. study with loadings of 0.40 or greater compared to the 25 items in the current study. There were 15 items that did not load onto any factors in the FIQ-HS (Table 5), compared to only 6 items in the Manz et al. study. A similarity found with the FIQ-E is that the school-based involvement factor accounted for the least variance on the FIQ-E as well as the FIQ-HS.

3.5 Scales

Three scales were created using the 40 items based on the factor structure: home-school communication, home-based activities, and school-based activities. The internal consistency of these scales was examined and found to be high to acceptable, with coefficients of 0.90, 0.88, and 0.76, respectively. Figure 1 shows participants' mean responses across the three scales of the FIQ-HS. The home-based activities scale yielded the highest involvement ratings ($M = 3.21$). The home-school communication ($M = 2.15$) and school-based activities ($M = 2.18$) scales yielded similar results.

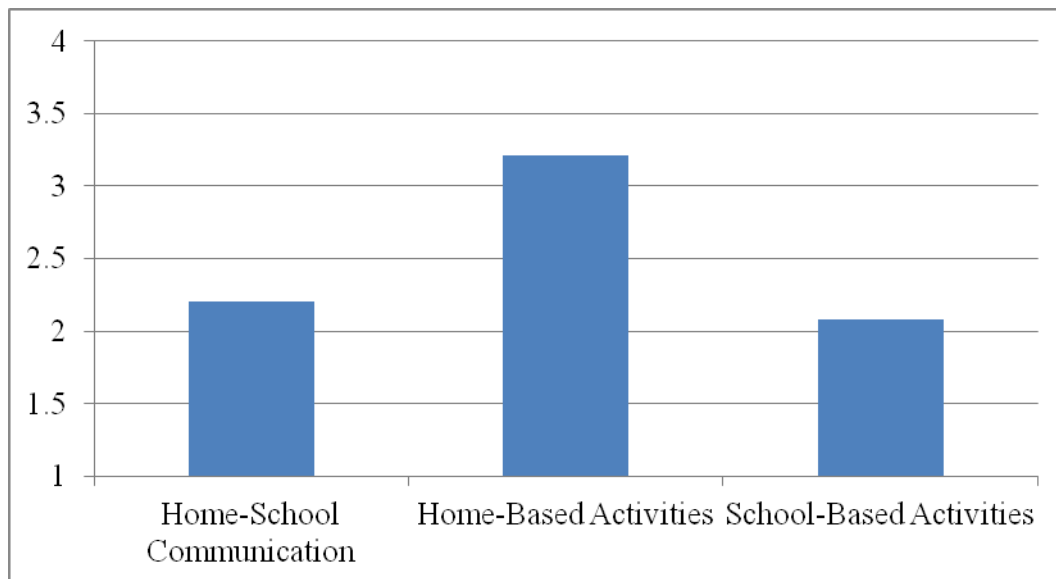


Figure 1. Parent responses across the three scales of FIQ-HS (1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Always)

3.6 Family Characteristics and FIQ-HS

A one-way MANOVA was conducted to determine if any family characteristics were related to the three scales of the FIQ-HS. All 40 items were included in the scales, and division of items was done based on their placement on the factor analysis. For the 15 items that did not load onto any of the three factors, researcher judgment was used to assign the item. The internal consistency of these scales was examined and found to be high to acceptable ($\alpha = .90$ to 0.76).

Using Wilk's Lambda statistic, there was a significant effect for the student's special education status on the three scales, $\Lambda = 0.93$. $F(6, 912) = 5.60, p < .01$. Parents who indicated that they did not know if their teenager was receiving special education services reported lower ratings of involvement on the home-school communication scale when compared to the parents who indicated their teenager was receiving special education services, $F(2, 458) = 5.14, p < .05$. Parents who indicated that they were unsure of their teenager's special education status also reported significantly lower home-based activities than parents who reported their teenager was either receiving or not receiving special education services, $F(2, 458) = 4.29, p < .05$.

Using Wilk's Lambda statistic, there was also a significant effect for the student's school on the scales, $\Lambda = 0.85$. $F(12, 1249) = 6.65, p < .01$. One of the five schools had significantly higher parent ratings on home-school communication [$F(4, 474) = 12.71, p < .01$] and school-based activities [$F(4, 474) = 6.10, p < .01$]. Parent age, family ethnicity, and parent's relationship to the student were not related to participants' ratings on the three scales.

4. Discussion

The purpose of this study was to validate a high school version of the FIQ by establishing internal consistency and a factor structure consistent with the previous versions. The results of the Cronbach's alpha indicate high internal consistency of the overall questionnaire, and high to acceptable internal consistency for each of the three scales. Results of the exploratory factor analysis supported a three-factor structure consistent with the early childhood, elementary, New Zealand, and early childhood short-form versions of the FIQ.

Results from the confirmatory factor analysis did not confirm an identical factor structure of the FIQ-HS and the FIQ-E. This may be because of the significant differences between the current predominantly White rural school sample and the sample used in Manz et al.'s (2004) FIQ-E validation study which was predominantly African Americans from urban schools. Through the exploratory factor analysis it was discovered that a consistent factor structure with the FIQ-E was evident in the current data. However, fewer items loaded on the FIQ-HS than the FIQ-E, which likely caused the failed confirmatory factor analysis.

Results from the exploratory factor analysis indicated that 11 items on the FIQ-HS loaded onto the home-school communication factor, compared to 13 in Manz et al.'s (2004) study. Nine FIQ-HS items loaded on the home-based activities factor compared to 15 items in the FIQ-E study, and 5 FIQ-HS items loaded on the school-based activities factor compared to 12 in the FIQ-E study. The lower number of items that loaded onto factors in the current study may be attributed to differences in behavior between the elementary and high school family populations. Sample size is not believed to be an issue, as the current study had 517 parents and the Manz et al. study had 444 parents. Considering the number of items on the questionnaire (40), the current sample size is considered appropriate for conducting a factor analysis.

There were 15 items that did not load onto any factor in the current study, compared to only 6 in the Manz et al. (2004) study. This is likely attributed to a difference in response patterns between the current sample and Mans et al.'s sample. Given the significant differences between the two samples' ethnicity and geographic location, differences in response patterns are not surprising. Items that are the same between the FIQ-E and the FIQ-HS but did not have consistent results may not be meaningful or sensitive enough to the current sample.

Of the 15 items that did not load onto any factors only 1 item was a new addition, "I teach my teenager how to perform home-living skills (ex. laundry, dishes, car maintenance)". This suggests that a majority of the 6 new items added to the FIQ-HS were appropriate and captured unique involvement behaviors that were not seen at the elementary level.

The three scales created based on the factor structure were found to have high to acceptable internal consistency. These scales represent three unique facets of family involvement. When participants' responses were examined, the home-based activities scale was found to yield higher involvement ratings than the home-school communication and school-based activities scale. This difference may be explained by the expectation that teenagers become more independent as they enter young adulthood. Thus, parents may be communicating less with school staff, shifting that responsibility to their teenager. Parents may be less involved in school-based activities because of the lack in-school opportunities made available at the high school level. However, as parents become less involved in activities at the school and communicating with school staff, they appear to continue to provide support to their teenager in the home setting.

A significant difference was found between parents who did and did not know whether their teen was receiving special education services. Specifically, parents who indicated that their teenager was receiving services indicated higher ratings on the home-school communication scale than parents who indicated that they didn't know if their student was receiving services. This difference may be because of the necessity for communication and/or the federally mandated communication tactics schools are required to perform with parents of disabled students. For example, parents of students with disabilities may need to contact school staff to obtain information that their student is not capable of relaying. Federal and state laws require school staff to be in regular communication with parents of disabled students to get their input on their teenager's programing, update them on their progress and changes to programing, and inform them of their rights.

Parents who indicated that their teenager was receiving special education services indicated higher ratings on the home-based activities scale than both parents who indicated their teenager was not receiving these services and parent who did not know if their teenager was receiving services. This difference may be because students with disabilities typically require more direct assistance to carry out life activities, so these parents may need to provide more direct assistance at home such as helping with homework, teaching them how to perform living skills, and providing learning materials.

4.1 Limitations

There were several limitations to the current study. Most importantly, this was a preliminary study, so results should be interpreted with caution. Replication studies are needed to verify the current findings. Although the sample size ($N = 517$) was appropriate for the analyses, a larger sample size would be beneficial.

Although from 5 districts, a significant limitation to the current study is the homogeneity of the sample. The majority of participants were Caucasian, from rural areas, and mothers of the students. Non-White participants accounted for only 3.9 percent of the total sample. This disproportionate representation in ethnicity is quite different from Manz et al.'s (2004) FIQ-E and Fantuzzo et al.'s (2000) FIQ-EC validation samples in which the participant's were predominantly African American and living in urban areas. Considering that the current results are being compared to the results found with these samples, it is fair to say that the factor structure found in the FIQ-EC, E, and HS versions appears to be consistent across White and African American ethnicities and urban and rural areas. However, more research with diverse samples is needed.

The majority of the responders to the survey were mothers (79.7%), which is consistent with Manz et al.'s (2004) sample (79%). This disproportionality of mothers and fathers should be examined in future research. Differences between the participant's relationship to the student and their responses on the FIQ-HS were not found. However, with more fathers participating significant differences may emerge.

4.2 Future Directions

More research is needed to evaluate the generalizability of the FIQ-HS and its internal consistency and factor structure across multiple samples. As a pilot study, the current research can be used for comparison against other samples using the FIQ-HS. By continuing to develop this questionnaire it can eventually be utilized by schools to examine their family involvement practices on a regular basis. This is especially important in the high school setting where there is limited research on family involvement practices and few psychometrically sound assessments available for schools.

The results indicated that one school in the current sample had significantly higher involvement levels in the home-school communication and school-based activities scales. This school was the only alternative school included in the sample. These differences in involvement were examined on a small scale in the current study with the alternative school's sample size of 29. While each school system has unique family involvement practices, generally differences between traditional and alternative schools can be examined. If consistent results are found on a larger scale, specific behaviors or programs that are occurring in these alternative schools can be further examined to find practices that can be utilized in traditional schools to increase involvement.

In 2013, Fantuzzo and colleagues validated a short form of the FIQ-EC. They were able to reduce the original 42-item questionnaire to only 21 items and still demonstrate acceptable internal consistency and a consistent factor structure. The current 40-item FIQ-HS takes approximately 10-15 minutes to complete. If this questionnaire could be reduced, it would likely increase the participant response rate as well as ease data analysis. This may be particularly important for schools that may eventually administer this questionnaire to parents without the assistance of researchers.

The FIQ now has an early childhood, elementary, New Zealand elementary, early childhood short form, and high school versions validated. Future research should seek to validate a middle school version of the FIQ for grades 6th through 8th. This student family population is too unique from the elementary and high school population to include them in the FIQ-E or FIQ-HS versions. A middle school version of the FIQ can be developed by examining the items on the FIQ-E and the FIQ-HS for appropriateness to the middle school setting, and considering other areas unique to this population.

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Note

Note 1. For any information about Appendix, please contact with the corresponding or the editor of the journal.

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