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Original article

Urban Middle School Parent Perspectives: The Vaccines They Are Willing to Have Their Children Receive Using School-Based Immunization Programs

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Abstract

Purpose: With new vaccination recommendations for adolescents, school-based immunization programs become a valuable alternative site for immunization. This study seeks to determine factors associated with parental willingness to utilize school-based programs for immunizations.

Methods: A questionnaire was distributed to the parents of 11–14-year-olds attending 7 middle schools in a large, urban public school district. Participants were asked multiple questions including medical home enrollment, primary language spoken at home, site of last immunization, and comfort with their child receiving specific vaccines during school hours. Frequencies, chi-square analyses, and logistic regression analyses were performed using SPSS 17.0.

Results: A total of 615 parent questionnaires were included in the analyses; 81% of parents were Hispanic, 16% black, 39% spoke primarily English at home, and 77% indicated that they had a medical home for their child. Regarding specific vaccines, the largest percentage of parents were willing to have their child receive influenza vaccine (57%) and the smallest percentage were willing to have the human papillomavirus vaccine (27%) at school during school hours. Parents who had used a school-based clinic for their child's last immunization were more willing to receive each vaccine at school.

Conclusions: This study indicates that there is significant interest and willingness among predominantly lower income, Hispanic middle school parents to have their children receive specific vaccines during school hours through school-based immunization programs. More study is needed among a more diverse population of parents to help target the various needs of parents and adolescents and ultimately increase adolescent immunization rates.

Keywords: School-based immunization programs; Adolescents; Parent perspective; Vaccines; Medical home; Influenza vaccine; HPV vaccine

School-based immunization initiatives have been successful at improving access to immunizations and increasing immunization rates among young adolescents in the United States. These initiatives were used most notably in the mid-1990s when the Advisory Committee on Immunization Practices made a universal recommendation for hepatitis B vaccination among all adolescents [1]. Ultimately, school-based programs, in conjunction with school-entry mandates, helped adolescents achieve compliance with the Advisory Committee on Immunization Practices recommendation [2,3] and improved youth access to immunization services [4–7].

With new recommendations including the annual recommendation for seasonal flu vaccination among those 6 months to 18 years of age, [8] school-based immunization programs for adolescents are garnering new attention in the United

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Table 1
Characteristics of the parent respondents

Variable	Percentage of respondents (N)
Race/ethnicity	
Hispanic	81 (498)
Black	16 (100)
White	1 (6)
Other/missing	2 (11)
Primarily English spoken at home	39 (272)
Parents of females	58 (357)
Grade of child	
6th	39 (241)
7th	38 (235)
8th	23 (139)
Child enrolled in medical home	77 (474)

States. Pediatricians are receptive to the idea of school-based immunization programs for influenza, [9,10] and recent studies have shown that pediatricians will potentially be overwhelmed if adolescents actually come in as instructed for all of the new immunization recommendations [11]. Parental perspectives about school-based immunization initiatives for young adolescents in the United States have not been as extensively explored [12,13]. However, research thus far indicates that despite little exposure to or experience with school-based immunization programs, many parents indicate strong interest in having their children immunized using school-based immunization programs [12].

Further information regarding parents' willingness to have their children immunized in the school setting is needed to develop targeted parental education and to plan for the successful implementation of this important immunization strategy for adolescents. The objective of this study is to better understand whether parental willingness to use a school-based program for their child's immunizations differs by specific immunization.

Methods

In May, 2009, a ''post-program'' questionnaire for students' parents/guardians was distributed to middle school students (grades 6–8) at seven urban middle schools in Houston, Texas. The seven participating schools were selected using a random numbers table from among a subset of schools with a high proportion of students enrolled in the free lunch program ($\geq$94%); three of the schools included in this analysis have school-based clinics on site.

This ''post-program'' questionnaire was the third phase of an immunization project that included a ''pre-program'' questionnaire distributed to parents in September and October of the school year (at all seven schools) followed by voluntary, school-based immunization of students who had not previously been immunized with tetanus and diphtheria toxoid and acellular pertussis (Tdap) and meningococcal A,C,Y, W-135 conjugate (MCV4) vaccines (at five of the seven schools).

The ''post-program'' questionnaire, provided in English and Spanish (with a 2nd–3rd grade reading level), was distributed to all enrolled students during their homeroom class period and was addressed to the parents/guardians of the school students. Return of the questionnaire resulted in a chance to win an iPod shuffle. Students were instructed to return the questionnaire to either the homeroom teacher or the school nurse; study personnel secured all questionnaires after a 3-week period. The project was approved by the Institutional Review Boards of the Baylor College of Medicine and the Houston Independent School District.

The questionnaire

Demographic data collected included gender and grade of the child attending school, race/ethnicity, number of children for whom the parent/guardian is responsible, and primary language spoken at home. Further questions addressed whether the child had an identified medical home (defined as ''a regular place to go for medical check-ups and immunizations/shots where they have a medical record for my child''), the last time the child received an immunization, where the child went to get the last immunization (''To his/her medical home; To the emergency room; To the city or county health clinic; To a mobile clinic; To school-based programs during school hours; To a pharmacy; Other; He/she does not receive immunizations''), general knowledge of new recommendations for 11–12-year-olds (''Are doctors recommending vaccines for 11–12 year olds?''), where the parent prefers to have the child immunized, and which vaccines the respondent would feel comfortable having his or her child receive during school hours.

Analyses

The primary outcome variable for this analysis was comfort having a child receive a specific vaccine during school hours. The question, ''Which vaccines would you feel comfortable having your child receive during school

Table 2
Percentage of parents willing to have their child receive specific vaccines during school hours

	Tdap (N)	MCV4 (N)	Varicella (N)	MMR (N)	Influenza (N)	HPV4 (N)	HBV (N)
Willing to receive vaccination during school hours	41% (252)	35% (214)	39% (238)	36% (224)	57% (351)	27% (165)	37% (226)

Tdap = tetanus and diphtheria toxoids, and acellular pertussis vaccine; MCV4 = quadrivalent meningococcal conjugate vaccine; MMR = measles, mumps, and rubella vaccine; HPV4 = quadrivalent human papillomavirus vaccine; HBV = hepatitis B vaccine.