Predictors of Children's Health Condition in California with Focus on Migration Aspects

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Context
In 2000, out of 33.9 million residents in California 26.2% were not US-born and one third was of Hispanic or Latino origin [1]. Almost half of the children aged 0-17 – approx. 4.4 million – were immigrants or the children of immigrants [2]. Immigrants play a major role in the economic industry of California. They mostly work in low wage service sectors (e.g. seasonal farm workers) and are rarely health care secured through their employer [3]. Thus, immigrants and their families face certain barriers of staying healthy. Many studies have been conducted on adults and adolescents in respect to the impact of migration and ethnic differences on health, but little is known about children aged 0-11 [4-9]. We therefore performed an analysis of predictors for health condition of children aged 0-11 with a special focus on migration aspects.

Methods
We used data from the 2003 California Health Interview Survey (CHIS) which was a telephone survey of 40.000 households. Data on 8,526 children were collected by interviewing the child's primary guardian. The study population consisted of: Latino (2,573 – 30.2%), Asian (807 – 9.5%), Black or African American (492 – 5.8%), American Indians/Alaskan natives (AIAN) (118 – 1.4%), Pacific Islander (PI) or other single/multiple race (234 – 2.7%) and Whites (4,302 – 50.5%). As American Indians/Alaskan Natives (AIAN), Black or African Americans and Pacific Islanders (PI) or other single/multiple race only contained small numbers and their stated health status was quite similar in percentage we grouped these for the further analysis in one cluster. 4,259 children were male and 4,267 female. 557 (6.6%) children were described as having a poor or fair health condition, this group was classified as having poor health. Selected predictors were age, gender, race, physical activity, birth weight, need for medicines/drugs, health access measured as place to go in the case of illness versus no, proficiency of English language, having health insurance versus no, poverty level, migration status and parents' education level. Variables were measured on either ordinal or nominal scale. We used chi-square-test for bivariate analysis and logistic regression following the strategy outlined in Hosmer and Lemeshow [10]. All analyses were performed with SPSS 12.0.

Results
Twice as many Latinos, Asians, American Indians/Alaskan natives, Black or African Americans and Pacific Islanders or other single/multiple race families had no usual place to go to with their child compared to Whites. Multiple logistic regression analysis revealed that both parents foreign born (Odds ratio: 2.22; 95% CI 1.53 - 3.22; p<0,001), lack of English proficiency (1.50; 95%-CI: 1.20 - 1.92; p=0.001), low level of parents' education (2.58; 95% CI: 1.79-3.74; p<0,001), poverty (3.22; 95% CI: 2.28 – 4.55; p< 0.001) and being Asian (3.07; 95% CI: 1.49 – 6.34; p=0.002) is negatively associated with child's health condition.

Discussion
In contrast to the findings of our study Yu et al. described Asian American children to be healthier than non-Hispanic Whites [11]. In the study of Yu et al. more than half of the Asian study population had a mother with at least college degree. After controlling for socioeconomic and demographic factors the difference in health status between Asians and non-Hispanic Whites was no longer significant in Yu's study. However, another study using data from the National Health Survey 1992-1995, showed that the health of immigrants decreased with the duration of residence [12]. Another important factor is the heterogeneity within this group in the CHIS data. 'Asian' comprised several ethnical groups like Japanese, Chinese, Korean, Vietnamese and others, which differ strongly from one another concerning health status and health behavior [12]. Patel et al. investigated the 'Hispanic Paradox', which described the phenomenon of Hispanics being healthier although they had an average socioeconomic status comparable to that of African Americans. Their age-adjusted mortality rates were similar to that of non-Hispanic whites. In their findings Patel et al. revealed that the Hispanic advantage was primarily true for men. Although there was a gender difference in some studies, this was not significant in our analysis. The previous mentioned studies in addition to Pourat et al. underlined our findings about the association between the parents' migration status and the children's felt health status [2]. Our findings even showed a significant gradient: children with both parents non US-citizen had a higher chance of worse health than children with at least one naturalized parent. A similar health gradient was found comparing the parents' level of education. Children with parents being in the lowest educational category compared to the reference category had an approximately 2.5 higher chance of a fair/poor health status.

Conclusion
The results show a significant impact of migration background on the health status of children. These findings suggest the necessity of governmental efforts, which would support immigrants in respect to their health access, reduce poverty and improve English proficiency.

Keywords
migration, health status, children, logistic regression

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