

Parental Characteristics Related to Specialty Therapy Service Utilization Among Children – A Virginia and National Comparison

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Abstract

Purpose:

Identify how parental characteristics impact specialty therapy service utilization among children between the ages of 1-17 from the 2016 National Survey of Children's Health (NSCH).

Methods:

Data for this study included 50,212 parents from a nationally representative sample and 1,158 parents in the state of Virginia where characteristics were identified that negatively influenced the utilization of specialty therapy services for child.

Results:

Of 1,158 children between the ages of 1-17 years in Virginia, 9.5% of children needed special therapy such as physical, occupational, or speech therapy. Of those children in need of special therapy services, 3.6% did not receive the necessary health resources. Impacting variables associated with the needed health care not received included, coordination of care among health care providers or services (75%), health care costs (58.3%), difficulties paying for child's medical bills (88.9%) and complications accumulating necessary specialist care (83.3%).

Conclusions:

Long-lasting consequences will arise if children are not receiving early intervention specialty services such as educational and employment disadvantages, low socioeconomic status, and poor health outcomes. This analysis suggests public health concerns should be focused on what parental characteristics directly impact specialty therapy services among children and what

type(s) of intervention services would promote the uptake of services to improve health outcomes.

Introduction

Despite public and private programs to improve social determinants of health and health equality within at-risk populations, evidence continues to demonstrate the depth of this public health concern. Within recent decades, research has examined the outcomes of medical care access shown to improve children's health. According to Leininger & Levy (2015), access to health care and providers plays a small role in the uptake of services, where other contributing factors are much more alarming. For example, lack of medical access makes up a mere 10% of early mortality in the population associated with variables such as genetic makeup and environmental factors (McGinnis & Foege, 1993). As a result, public health representatives may consider seeking out other variables to improve necessary health outcomes for children.

A knowledge gap exists that seizes to identify what contributing factors associated with the parent or guardian are halting the uptake of specialty services such as physical, occupational and speech therapy of their child. Furthermore, a lack of knowledge exists to identify the repercussions associated with these services not being utilized and the life-long consequences that may arise. The purpose of this study seeks to identify what parental characteristics impact specialty therapy service utilization among children aged 1 to 17 years. It is critical to recognize parental characteristics that are impacting these services in view of the fact that interventions can be implemented to assist in the uptake of such services. These characteristics may suggest that necessary health services are not being met for their children where specialty therapies (i.e., physical, occupational and speech) are lacking. Negative health outcomes that can have lifelong consequences are likely to occur if children are not receiving these services.

Despite tremendous progression, not all children have health insurance coverage, where immigrant children are the most vulnerable population. In addition, accumulated health insurance coverage does not guarantee access to care where insured children may continually face barriers to receive access of care needed (Leininger & Levy, 2015). Insurance coverage among low-income children is fluid where children actively move between public and private insurance and being uninsured. For example, according to one nationally represented study, over

one-quarter of child enrollees in Medicaid had left the program, where half had become uninsured (Sommers, 2005). A phenomenon described as “churn” has been named to explain high Medicaid dropout rates coupled with readmission into the program in a momentary time period (Hayes & Schoen, 2013). Unfortunately, this pattern is foreseen to continue over the next decades where children’s eligibility for health insurance coverage will churn between subsidized and employer-based coverages and Medicaid (Sommers & Rosenbaum, 2011). The Affordable Care Act (ACA) currently imposes a fine on families if their children are uninsured; however, a grace period allows a lapse in health insurance coverage of up to three months in any given year (Gardner, 2019). This lapse in coverage is alarming as undesired outcomes are likely to occur such as high medical costs, decreased uptake of necessary services and family distress.

The requirement for healthcare is dominated by their health status; the poorer health a child is in, an increase in medical services will be necessary. However, inferior health may also create specializations of care for the child, which may be difficult to accumulate. For example, physician availability to provide necessary services is determined by the number of physicians/providers within a geographical location (Gardner, 2019). Moreover, specialty service providers such as physical therapists, occupational therapists and speech therapists may lack within a location, creating unavailable access to services. The lack of services within a geographical location requires access to transportation, which may cause supplemental burdens to families who are already at disadvantages. The state (i.e., Virginia) a child lives in has been shown to affect access to health care needs in light of differing demands of the healthcare system. For example, the healthcare system is heavily dependent on the population size as well as states’ health policy decision making and has been shown to affect access to health care needs (Gardner, 2019).

Methods

The conceptual model of Anderson and Newman on Health Service Utilization was identified as the framework and foundation of this study. This conceptual model set out to determine circumstances that facilitate or hamper utilization of access to medical care (Andersen, 1995). The Andersen and Newman framework distinguished three identifiable characteristics considered to influence an individual’s access; predisposing factors, enabling factors and need factors.

The initial characteristic highlighted in this conceptual model includes predisposing factors. Factors that have been identified include socio-cultural characteristics of the patient that were present preceding the individual's illness. Social structure is recognized as one predisposing factor and is associated with multitudinous attributes such as education and ethnicity (Andersen, 1995). Education level was one parental feature that was identified within the present study that is a well-established predictor of socioeconomic status. The second factor that influences access to medical care is enabling factors. Enabling factors are described as the organization or planning of the obtained health care such as personal/family and community influences (Andersen, 1995). Inferior health care access in various geographical locations creates transportation requirements, leading to additional burden to families.

Within this present study, geographical location was taken into consideration to identify whether health care availability and accessibility is a factor on the uptake of specialty therapy services among children. Finally, the third characteristic Andersen & Newman (1995) identified that affects an individual's access to health services is the need factor. The need factor is influenced by two variables including the perceived outcome and the evaluated outcome. A perceived need factor is driven from the individual's personal view upon their own general health and functional state, where the evaluated need factor represents the judgment of a professional (i.e., physician) (Andersen, 1995). When evaluating the effect of parental characteristics on specialty therapy service utilization among children, an apparent need to seek out health care resources and services to improve the overall health and well-being of the child is desired.

Data

The data were obtained from the 2016 National Survey of Children's Health (NSCH) (United States Census Bureau, 2018). Parents or guardians knowledgeable of the study child's health and health care were asked to complete the NSCH survey. The sample for this study was derived from the original 50,212 households nationwide with age eligible children (0-17 years old) whose caregivers completed the survey. The first filtering criteria selected for this study to identify the cases was age. Age was filtered to include children between the ages of 1 to 17 years. The next filter added to the data included isolating households from the state of Virginia. Finally, the necessity of specialty services such as whether the child needed physical, occupation or speech therapy was filtered for both national and state data. Nationally, 50,212 children

between the ages of 1 to 17 were examined from a representative sample drawn from all regions of the United States. When identifying identical factors solely in the state of Virginia, 1,158 children included in the sample were examined.

Variables

The dependent variable in this investigation asked the respondents, ‘Does [study child] need or get special therapy, such as physical, occupation, or speech therapy?’. Responses for the dependent variable were dichotomous and recorded as either ‘yes’ or ‘no’. All pertinent independent variables for the present study were selected from the 2016 NSCH as defined by the Andersen Newman Framework and categorized into predisposing factors, enabling factors and need factors.

When identifying parental characteristics, independent variables targeted within this study examined race, education, primary household language, employment status, health insurance coverage and geographical location. Race of selected child was presented to the parent/guardian as, ‘What is [study child]’s race?’ and included responses of White alone, Black or African American alone, American Indian or Alaska Native alone, Asian alone, Native Hawaiian and other Pacific Islander alone, some other race alone, and two or more. Coupled with this question, a separate ethnicity question was presented within the NSCH questionnaire which asked, ‘Is [study child] of Hispanic, Latino, or Spanish origin?’. Responses for this independent variable were dichotomous and recorded as ‘Hispanic or Latino Origin’ or ‘Not Hispanic or Latino Origin’. For the purposes of this study, responses were collapsed down into 4 races; ‘White’, ‘Black’, ‘Hispanic’ and ‘Other’.

The second independent variable that was identified within this study was educational status. The questionnaire asked, ‘What is the highest grade or year of school you have completed?’ where responses included ‘8th grade or less’, ‘9th-12th grade; no diploma’, ‘High school graduate or GED completed’, ‘Completed a vocational, trade, or business school program’, ‘Some college credit, but no degree’, ‘Associate degree’, ‘Bachelor’s degree’, ‘Master’s degree’ and ‘Doctorate or professional degree’. For the purposes of this study, the examined variables when identifying educational status included; no diploma, high school graduate, some college credit, associate degree, bachelor’s degree, master’s degree, and doctorate or professional degree. In conjunction

to education, primary household language was identified as a parental characteristic as it relates to Andersen and Newman's Framework model where social structure affects the access of healthcare services. Respondents reported to the question, 'What is the primary language spoken in the household?' and responses included 'English', 'Spanish' and 'Other'.

Enabling factors pinpointed in Andersen and Newman's Framework model identified personal/family enabling factors that contributed to the accumulation or lack of care obtained. This aspect was included within the current study by including independent variables associated with employment (5 out of 52 weeks) and health insurance coverage (over past 12 months). Employment was identified when respondent answered, 'Were you employed at least 5 out of the past 52 weeks?'; answers were dichotomous in nature and recorded as 'Yes' or 'No'. Health insurance coverage was recorded by presenting the question, 'During the past 12 months, was [study child] ever covered by any kind of health insurance or health coverage plan?'; responses to this question included 'Yes, this child was covered all 12 months', 'Yes, but this child had a gap in coverage' and 'No'. The final parental characteristic that was identified in relation to the independent variables was geographical location, in accordance with Andersen and Newman's Framework model where enabling factors such as community influences affect received health care services. This independent variable derived from the response holders' home and associated zip codes presented within the NSCH survey.

Additional independent variables identified that may contribute to the lack of uptake of specialty services were accessed. Initially, a dichotomous question with responses of 'Yes' or 'No' was presented to parents stating, 'During the past 12 months, was there any time when [study child] needed health care but it was not received? By health care, we mean medical care as well as other kinds of care like dental care, vision care, and mental health services.' Other variables identified which had responses of 'Yes' or 'No' included: 'Which of the following contributed to [study child] not receiving needed health services: there were issues related to cost, the services [study child] needed were not available in your area, there were problems getting an appointment when [study child] needed one and there were problems with getting transportation or child care'.

Simple descriptive statistics (means, medians, standard deviation, ranges, and proportions) for the primary dependent variable, and independent variables were conducted. In addition to

descriptive statistics, analysis between our independent and dependent variables was performed through SPSS version 25 (IBM Corp, 2017).

Results

The current study identified parental characteristics that could potentially hamper the uptake of specialty therapy service utilization among children between the ages of 1 to 17 years. Results were grouped in accordance with Andersen and Newman's Framework model. Predisposing factors and enabling factors were coupled together when evaluating parental characteristics. Need factors were identified as outcome variables that contributed to the necessary health care services (physical, occupational and speech therapy) not being utilized.

Predisposing Factors

Predisposing factors included race, education and primary household language (Table 1). Nationally, out of 50,212 respondents, 38,961(77.6%) were White, 3,075(6.1%) were Black, 5,523(11.0%) were Hispanic and 8,176(16.2%) identified as a race other than White, Black or Hispanic. Virginia data held a total number of 1,158 respondents where 792(68.4%) were White, 120(10.4%) were Black, 104(9.0%) are Hispanic and 246(21.3%) identified as another race. Out of the 50,212 respondents nationally, 1,552(3.2%) held no diploma, 5,372(11.0%) were high school graduates, 7,052(14.5%) had some college credit, 5,131(10.5%) hold an associate's degree, 15,475(31.8%) hold a bachelor's degree, 9,769(18%) hold a master's degree and 3,080(6.3%) hold a doctorate or professional degree. Finally, the last predisposing factor that was identified in this study when identifying parental characteristics was the primary household language. Nationally, 46,687(93.7%) of respondents stated the primary household language spoken was English. In comparison, within the state of Virginia, 1,063(92.3%) of respondent's primary household language was English. Nationally, 1,397(2.8%) speak Spanish and 1,751(3.5%) speak a language other than Spanish or English. In comparison, 33(2.9%) of respondents in the state of Virginia identified as a Spanish speaking household and 56(4.9%) stated that a language counter to Spanish or English is spoken.

Table 1.

Predisposing Parental Characteristics of National and Virginia Samples from the 2016 NSCH

<i>Predisposing Parental Characteristics</i>		<i>National Freq(%)</i>	<i>Virginia Freq(%)</i>	
<i>Race</i>	White	38961(77.6)	792(68.4)	
	Black	3075(6.1)	120(10.4)	
	Hispanic	5523(11.0)	104(9.0)	
	Other	8176(16.2)	246(21.3)	
<i>Education</i>	No Diploma	1552(3.2)	20(1.7)	
	High School Graduate	5372(11.0)	93(8.3)	
	Some College Credit	7052(14.5)	167(15.0)	
	Associate Degree	5130(10.5)	91(8.1)	
	Bachelor's Degree	15475(31.8)	370(33.1)	
	Master's Degree	9769(18.0)	275(24.6)	
	Doctorate or Professional Degree	3080(6.3)	77(6.9)	
	<i>Primary Household Language</i>	English	46687(93.7)	1063(92.3)
		Spanish	1397(2.8)	33(2.9)
		Other	1751(3.5)	56(4.9)

Enabling Factors

Enabling factors distinguished in this study included employment (5 out of 52 weeks), health insurance coverage (past 12 months) and geographical location (Table 2). Nationally, 37,592(73.5%) respondents stated that they were employed a total of 5 weeks out of 52 weeks. In comparison, nationally, 11,538(23%) of individuals were not employed 5 out of 52 weeks. When examining the state of Virginia, 856(73.9%) of respondents were employed during the same parameters; however, 271(24%) stated they were unemployed. Nationally, 47,488(95%) of individuals responded that their child had health insurance coverage all 12 months, 1,202(2.4%) had health insurance coverage during the past 12 months, but with a gap in that coverage, and 1,310(2.6%) had no health insurance coverage. Virginia respondents stated that 1,092(94.6%) had complete health insurance coverage for their child over the past 12 months, 31(2.7%) had health insurance coverage, but a gap in coverage, and 31(2.7%) had no health insurance coverage. Finally, national data on parental characteristics illuminated results where 28,367(83.9%) of respondents lived in a metropolitan statistical area and 5,428(16.1%) did not live in a metropolitan statistical area. In comparison, in the state of Virginia, 1,158(100%) of respondents live in a metropolitan statistical area, derived from the zip code of respondent's homes.

Table 2.

Enabling Parental Characteristics of National and Virginia Samples from the 2016 NSCH

<i>Enabling Parental Characteristics</i>		<i>National Freq(%)</i>	<i>Virginia Freq(%)</i>
<i>Employment (5 out of 52 weeks)</i>	Yes	37592(73.5)	856(73.9)
	No	11538(23)	271(24.0)
<i>Health Insurance Coverage (past 12 months)</i>	Yes, child covered all 12 months	47488(95.0)	1092(94.6)
	Yes, but child had	1202(2.4)	31(2.7)

		gap in coverage	
<i>Geographical Location</i>	No	1310(2.6)	31(2.7)
	Metropolitan Statistical Area	28367(83.9)	1158(100.0)
	Not Metropolitan Statistical Area	5428(16.1)	0(0.0)

Need Factors

Of the 1,158 children between the ages of 1-17 years in Virginia, 9.5% of children were in need of special therapy services such as physical, occupational, or speech therapy. Of those children in need of special therapy services, 3.6% did not receive the necessary health resources.

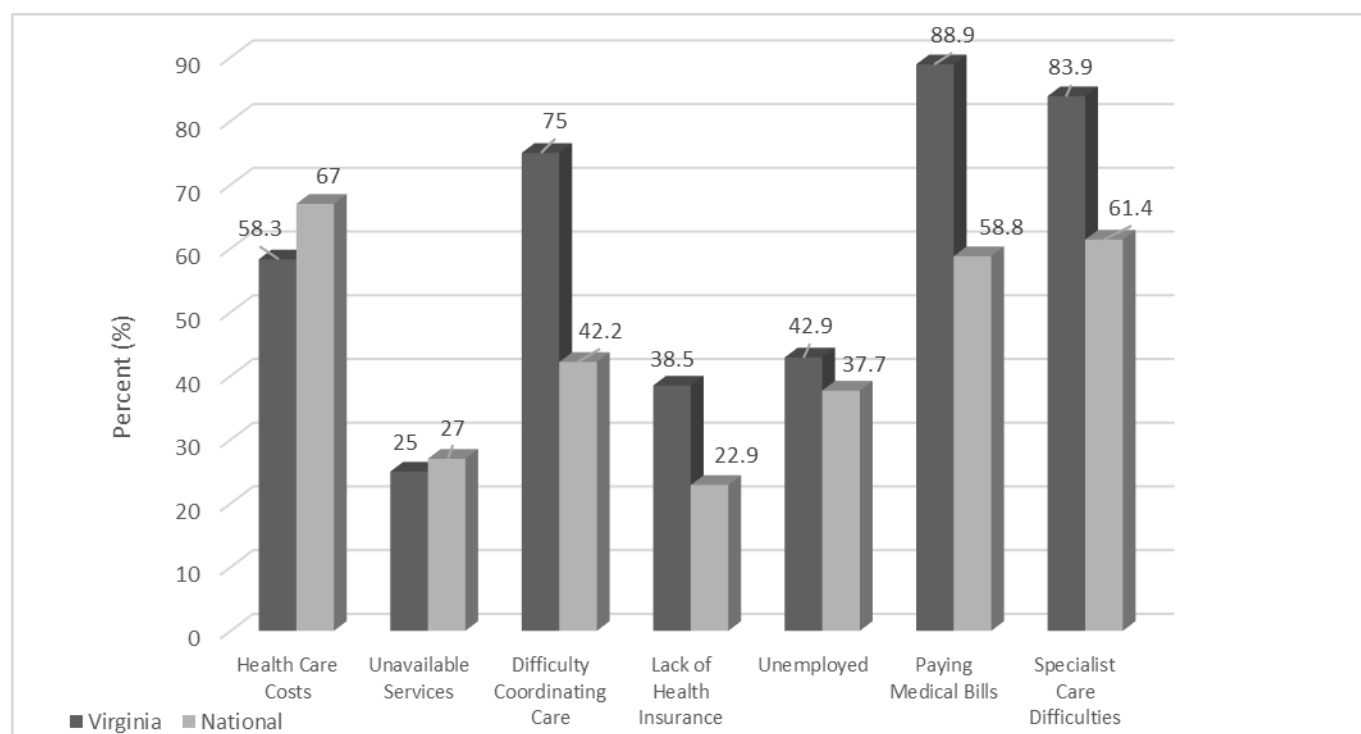
Contributing variables associated with the needed health care not being received included parental characteristics that would hamper the uptake of services (Figure 1). A total of 58.3% of Virginia respondents stated that health care costs hampered their child receiving therapies, 25% had unavailable services in their geographical location and 75% had difficulty coordinating care among health care providers or services. Difficulty coordinating care in this instance is described as inconveniences working with multiple doctors (i.e., physician vs therapist), unfavorable hours of operation when creating appointments and lack of transportation to accommodate appointments. Next, 38.5% of respondents had a lack of health insurance coverage for a consecutive 12 months, 42.9% were unemployed at least 5 out of the past 52 weeks, and 88.9% had difficulties paying for the child's medical bills. Finally, within the state of Virginia, 83.3% of respondents experienced challenges getting the needed specialist care. These challenges, for the purpose of this study, was described as difficulties receiving necessary referrals from physicians and hardships when creating appointments to receive needed services.

National data found that 7.9% of 50,212 children between the ages of 1-17 were in need of special therapy such as physical, occupational, or speech therapy. Of those children, 7.4% did not receive the necessary health resources. A total of 67% of respondents stated that health care costs was a contributing variable associated with the needed health care not being received.

Other variables that affected the child's uptake of special therapy services included unavailable services in area (27%), difficulty coordinating care (42.2%), lack of health insurance (22.9%), and unemployment (37.7). Nationally, two of the most influential variables that affected the uptake of services included the payment of medical bills (58.8%) and complications accumulating necessary specialist care (61.4%).

Figure 1.

Need Factor Variables Halting Uptake of Specialty Services of National and Virginia Samples from the 2016 NSCH



Discussion

We examined how parental characteristics impacted specialty therapy (i.e., physical, occupational and speech) service utilization among children between the ages of 1 to 17 using the Andersen and Newman Framework model. Our results indicated that in the state of Virginia, the most impacting variables halting the uptake of specialty services included the payment of medical bills and challenges accumulating needed specialist care. This analysis correlates with the Andersen and Newman Framework as enabling factors in that personal/family and

community influences are both strongly impacting variables that affect an individual's access to the utilization of health care services.

When examining the state of Virginia, 89% of respondents expressed that one parental characteristic that negatively impacts the utilization of specialty therapy services is the payment of medical bills. This analysis coincides with the literature review in that the financial burden of children's out-of-pocket health care expenditures has increased over time for all income groups. However, socioeconomic disparities are persisting, placing those families at a greater disadvantage from up taking needed services. During the examination of the data, it was imperative to identify demographics of the population as inferences can be made as to what groups would be at a larger disadvantage in comparison to others. Virginia data identified 84% of respondents experienced specialist care difficulties negatively impacting the utilization of needed services for their child. According to the Institute of Medicine Committee on the Consequences of the Uninsured (2002), children of families considered to be of lower-income, minority, or uninsured have worse access and utilization of specialty services in comparison to children with none of these characteristics.

When examining identified variables, and selecting for those who needed specialty therapy services, population size was significantly smaller than the initial study design desired. Initially, the study set out to exclusively examine children between the ages of 8 to 17 years both nationally and in the state of Virginia; however, with a small population size specifically in the state of Virginia, children between the ages of 1-17 years were examined. By widening the scope of age ranges for national and Virginia data sets, the population size doubled, allowing for an increased accuracy when evaluating factors that may halt the uptake of specialty therapy services of children. Furthermore, National and Virginia data from the preexisting 2016 National Survey of Children's Health was utilized which further limited more specific questions to be pursued. Although the NSCH survey is a nationally represented data set, variables were limited where inferences were drawn. For example, one question within the survey states, 'There were problems getting an appointment when [subject child] needed one' with dichotomous responses of 'Yes' and 'No'. This presented question to respondents is vague in nature and could pertain to multiple variables where formulated inferences were drawn from responses.

Future Directions

Simple and multivariate logistic regression to create a statistic model will be performed to evaluate the associations of correlates of uptake of specialty services. It would be beneficial to examine other contributing factors not identified within the NSCH survey that may affect the uptake of specialty therapy services of children. Literature correlated with this study points out that children are affected by cultural, social, and spiritual aspects of the environment that they live in, a variable not included within the NSCH survey. It would be interesting to explore the notion that culture, and spiritual influences may contribute to the lack of specialty services being utilized.

Conclusions

Social determinants of health and health equality within at-risk populations continue to burden communities. Early intervention specialty services such as physical, occupational and speech therapy are critical to youth if services are required. Long-lasting consequences will arise if the child is not receiving these specialty services such as educational and employment disadvantages. These consequences suggest that low socioeconomic status and poor health outcomes will occur within the child's lifetime. Outcomes of the analysis suggest that a public health focus should be directed towards what intervention services could be implemented to assist in the uptake of specialty therapy utilization. Examples of interventions that could be implemented include; increasing the utilization of social workers in targeted families to assist in the coordination of care, implementation of specialty services in locations where services are unavailable and the provision of financial planners to aid in payment planning towards accumulated medical costs. Through the identification of parental characteristics that impact specialty therapy (i.e., physical, occupational and speech) service utilization among children, improved health outcomes are likely to arise when interventions persist.

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