
Factors Associated with Utilization of Preventive Pediatric Services among Low-income Children in a Metropolitan Area of the United States: Focusing on Regular Visits and Continuity of Care

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This study applied a social ecological model in examining the effects of financial and non-financial predictors on access to preventive medical care. Face-to-face interviews were conducted with 320 mothers as to their use of health services for three to eight-year-old children. The target populations in this study were mothers and their children living in poverty in a metropolitan area of the United States. Utilization of preventive medical care was assessed by the frequency of planned medical visits and continuity of care. The continuity care was determined by returning to the same care provider.

Extended clinic hours and health insurance coverage had impact on planned medical visits. The communication between the mother and the primary care provider increased the likelihood to continue the care by 2 times (OR = 2.10, 95% CI = 1.24-3.55). And the mother with a payment schedule for care cost was significantly more likely to continue child's medical care than the mother did not have the schedule (OR = 3.85, 95% CI = 1.32-11.22). The study findings should be considered in order to enhance access to preventive care among particularly vulnerable populations such as low-income children.

Key words: Access to preventive care, low-income children, non-financial predictors, providers' attitudes

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I. Introduction

Access to preventive care is an important factor influencing the health status of children. The Institute of Medicine (IOM) defines access as “the timely use of personal health services to achieve the best possible outcomes.” (Gifford, Weech-Maldonado, & Short, 2005). Although good health status depends on more than the access to care, the health care access is a necessary prerequisite for maintaining health. Previous studies have indicated that children without adequate use of health care have lower immunization rates and less likely to be exposed to health information during their development and growth (Evans D, et al., 1997; Short & Lefkowitz, 1992; Shah, Kahan & Krauser, 1987). Effective preventive care for children includes many kinds of screening (e.g., vision, hearing), counseling, and immunization services (Reid, Hurtado, & Starfield, 1996). These preventive visits also provide opportunities for the pediatrician to monitor the child’s development and potential health problems, address parental concerns, and give nutritional guidance.

The disparities in using health care have been a public health problem across different population segments (Kelly et al., 2005). Particularly, among low-income children, there is increasing evidence of underutilization of health care and unmet health care needs (Shah, Kahan & Krauser, 1987). Studies have found that the children in poverty have more health problems, compared with the counterpart of children in affluent family (Kahn, Wilson & Wise, 2005; Evans D. et al., 1997). Evans et al. (1997) pointed out that the children with a lack of primary

care are in increased levels of morbidity. In the study of Hughes and Ng (2003), higher rates of chronic health problems, such as asthma or lead poisoning, are found among the children in poverty. Bordley, et al. (2001) also reported that a large number of low-income children experience without any physician contacts in a given year and receive inadequate preventive services. Their poor health status and unmet health care needs suggest an apparent lack of access to care. Aday and Forthofer (1992) indicated that they are more likely to seek medical care in response to occurring symptoms rather than preventive reasons. Furthermore, population living in poverty displays a number of barriers limiting their access to care other than financial barriers (Kelly et al., 2005). Structural barriers can impede access to care, such as availability of providers and providers’ attitudes.

For the purpose of this study, financial (e.g., health insurance, family income) and non-financial factors (e.g., the care delivery system, mother’s health beliefs, social norms) were examined in this study as predictors of access to preventive medical care. The outcome variables used in this study were the measures of health care utilization that most likely affect health outcomes. Continuity of care was determined by whether a mother was returning to the same providers when needing health care for their children. This study is one component of a larger study describing the Hispanic family’s access and barriers to child health care, funded by the U.S. maternal and Child Health Bureau.

II. Conceptual Framework

The conceptual models used in this study are based on Health Beliefs Model (HBM) and Starfield's primary health care model. The HBM emphasizes individual's predisposing factors like perceived benefits and barriers to getting health care related to health-seeking behaviors. Provider-related factors in terms of availability, communication, or referrals, take role in being a cue to action for complying health behaviors. Starfield (1995) identified continuity of care and regular planned visits as critical attributes of primary care. The model also shows the related paths of psychosocial and enabling variables with economic context to health services use.

III. Research Methods

1. Selection of Community

Chicago has geo-political divisions of the city. Most of the community areas are homogeneous economically and ethnically. The communities are selected if more than 30% of the residents live with income below 130% of the federal poverty level and more than 50% are ethnic minority population. The communities were chosen by the U. S. Census and City of Chicago Planning Council (2000) data of indicators (e.g., the

percentage of persons living in poverty, in overcrowded areas, and in dilapidated housing). Thereby, these communities in this study had in some ways homogeneous socioeconomic status. In addition, there is geographic proximity to a number of health services including federally qualified health center, Department of Health Clinic, and community hospitals (Chicago Department of Health, 2000). The 130% of the federal poverty level is defined as less than \$25,000 of annual family income in family of 4 (Wong et al., 2005). Three community areas fit these criteria and provided our sampling frame.

2. Sampling Procedures

The target subjects were the mothers of three to eight-year old children because the children in this age are heavy users of pediatric care and well child visits. Children with disability or chronic conditions were not included in this study since their mothers might have different health care needs, experiences, and health beliefs, compared to those mothers of children who did not have the conditions. A separate study would be needed to examine those factors affecting use of preventive pediatric care.

Of the 35 public preschools and elementary schools listed in the three communities, 17 schools were selected with randomization. After obtaining permission from the Chicago Public Schools central administration, the researchers attended a monthly principals meeting to explain the study and invite the principals' schools to participate. After obtaining the consent from participating school, notices were sent to the parents of children, inviting mothers of children aged three to eight years to participate. If the mother wished to participate, she returns the notice to the school with her contact information. Among the 403 mothers who

wanted to participate in this study, 320 mothers completed their interview, and the response rate was 79%. The research protocol, sample recruitment, and informed consent were approved by the Institutional Review Board of the University of Illinois at Chicago.

3. Demographic characteristics of the study sample

Table 1 shows the demographic characteristics of the study sample. The mean age of the responding mothers is 32.5 years old, and the mean length of residency in their community is 11.3 years. The majority of respondents (74%) reported an annual household income of less than \$25,000. The high rate of participating in the free or reduced school meal program (87%) shows that the majority of the children are from low-income family. As for the respondents' ethnic background, the majority (82%) are Hispanic population. More than half (61%) of the children had health insurance coverage.

Table 1. The socio-demographic characteristics of the study

Characteristics	Total Sample N=320
Mother's age (mean)	32.5 years
Mother's education (mean)	9.5 years
Less than high school	58.7%
High school or equivalent	20.5%
More than high school	20.8%
Length of residence in their community (mean)	11.3 years
Family ethnicity	
Hispanic (i.e., Mexicans, Puerto Ricans, or Central South Americans)	82.2%
African Americans	10.0%

<Table 1> Continued

Characteristics	Total Sample N=320
Caucasians	5.6%
Other ethnicity	2.2%
Household Annual Income	
Less than \$ 4,999	7.4%
\$ 5,000 - \$ 9,999	12.0%
\$10,000 - \$ 14,999	24.8%
\$ 15,000-\$ 24,999	30.3%
\$ 25,000-\$ 34,999	18.5%
More than \$ 35,000	7.0%
Participating in free or reduced-price meal programs at schools	87.2%

4. Study Measures

The independent and dependent variables of the study are summarized in Table 2.

Socio-demographic characteristics: Socio-demographic measures included age, family income, education levels, length of residency in their community, family ethnicity, and medical insurance coverage.

Health beliefs and social norms: The mother's beliefs in benefits to child's preventive health care were measured in the ways how they perceived regular pediatric visits and the importance of childhood immunizations. The social norms were assessed by the beliefs of the mother's social network member on the visits to pediatrician on a regular basis and preventive health care for children.

Access to preventive medical care: The measures of health care utilization are: (1) frequency of planned medical visits (not at all, one time per year, two times per year, or more than two times per year); (2)

continuity of care (i.e., did the child go back to the same provider).

Financial Barriers: Health insurance coverage during the past 12 months was categorized into all year; most months; only few months; or never. Mothers were asked the following questions concerning the burden of care costs: (1) during the past year, how much trouble did you have paying for medical care for you child; (2) when you make a visit to the pediatrician, do you have to pay something; (3) were you given a schedule for payment? (yes or no); and (4) do you get most or all of this money back from any medical insurance program; (5) how often has the cost of medical care prevented you from taking your child to the pediatrician; and (6) if you didn't have insurance, how often would the cost prevent you from taking your child to the pediatrician.

Provider's attitudes and Convenience in Accessing care: A regular site of health care was categorized in a public clinic or a private dentist office. Provider's availability was assessed with how often mother could access to medical care on extended hours (i.e. weekend and weekday evening hours) and the pediatrician give you enough time to talk about your concerns at the visits. The following questions referred to provider's management: (1) does your pediatrician send out a reminder card for the next appointment; and (2) does the pediatrician office call you the day before to confirm the appointment.

Convenience in accessing care was assessed with the following questions: (1) how long does it take you to get your child to the clinic; (2) is the clinic close to where you live (yes or no); (3) do you have to wait 30 minutes before your child is checked by a pediatrician (yes or no); and (4) how important is it to you that the clinic be close (always, often, rarely, or never).

Table 2. Independent and dependent measures of the study

Dependent variables
Use of preventive pediatric care
Frequencies of planned visits
Continuity of care (Return to the pediatrician)
Independent variables
Socio-demographics
Mother's age
Mother's education level
Family residency in the community
Family ethnicity
Household income
Health beliefs and social norms
Perceived benefit to regular pediatric visits
Perceived benefits to childhood immunizations
Social network's importance of regular pediatric visits
Social network's importance of childhood immunizations
Provider's characteristics
A regular site of medical care
The clinic office opens in weekday evenings (after 5 P.M)
The clinic opens on weekends
A reminder sent for next appointment
Telephone call the day before to confirm the appointment
The pediatrician give you enough time to talk about your concerns
Convenience in accessing care
Total minutes needed to get to the clinic
Waiting more than 30 minutes in the clinic
The clinic is close to where you live
Important that the clinic is close to where you live
Financial barriers
Health insurance (including Medicaid) during the past 12 months
Trouble in paying medical care for your child in the past year
You have to pay something at the visit
A schedule given for payment of medical care
Getting reimbursed from any medical insurance program
Cost prevents you from taking your child to the pediatrician
If without insurance, cost prevents you from taking your child to the pediatrician

5. Statistical Methods

Socio-demographic characteristics, provider's characteristics, and use of preventive care were described. Bivariate analyses were then conducted initially to determine which independent variables might be individually related to the health care use. Linear regression analysis was used for frequency of planned preventive visits, and logistic regression analysis was used for continuity of care. Multivariate analysis was conducted to estimate the degree to which variables correlated to the outcome variables while controlling for the effects of other variables. All statistical tests used p-values of less than 0.05 for statistical significance. SPSS software was used in all statistical tests in this study.

IV. Results

1. Mother's beliefs, Provider's Characteristics and Convenience in Accessing Care

Majority of the mothers perceived that regular pediatric visits, including childhood immunization can benefit their child's health. About more than half of the people in the mother's social network also recognized the importance of child's preventive health care. The children were more likely to use a private pediatrician office (56%) as their regular medical care place than a public clinic (44%). Less than half of the mothers were always able to access pediatric care on weekday evenings or the weekends. Half of the mothers received reminders for their next

visit and 66 percent received a telephone call to confirm the appointment. Sixty percent of the mothers said that the pediatrician always gave enough time to talk about their concerns. Mothers spent an average of 22 minutes to get to the clinic, but half of the mothers needed to wait more than 30 minutes in the clinic.

Table 3. Health beliefs, social norms, provider's characteristics and the convenience of access to care

Variables	Total Sample N=320
Mother's health beliefs	
1. Perceived benefit to regular pediatric visits	
A lot or some	67.5%
A little or not at all	32.5%
2. Perceived benefits to childhood immunizations	
A lot or some	74.5%
A little or not at all	25.5%
Social norms (Social network's beliefs)	
1. Importance of regular pediatric visits	
Very or somewhat importance	58.6%
Not too or not at all importance	41.4%
2. Importance of childhood immunizations	
Very or somewhat importance	60.6%
Not too or not at all importance	39.4%
Provide's characteristics	
1. A regular site of medical care	
Private pediatrician office	56.3%
Public clinics	43.7%
2. The clinic office opens in weekday evenings (after 5 P.M.)	
Always or often	48.8%
Rarely or never	51.2%
3. The clinic opens on weekends	

<Table 3> Continued

Variables	Total Sample N=320
Always or often	64.4%
Rarely or never	35.6%
4. A reminder sent for next appointment	
Yes	49.8%
No	50.2%
5. Telephone call the day before to confirm the appointment	
Yes	66.7%
No	33.1%
6. The pediatrician give you enough time to talk about your concerns	
Always or often	79.4%
Rarely or never	20.6%
Convenience in accessing care	
1. Total minutes needed to get to the clinic	22 min.
2. Waiting more than 30 minutes in the clinic	
Yes	49.7%
No	50.3%
3. The clinic is close to where you live	
Yes	69%
No	31%
4. Important that the clinic is close to where you live	
Very or somewhat important	81.9%
Not too or not at all important	18.1%

2. Financial Barriers and Use of Pediatric Services

Approximately 66% of the children had health insurance coverage for their pediatric care. The types of health insurance include private insurance, HMO (Health Maintenance Organization), or Medicaid. The Medicaid is a government supporting health insurance for the children

aged up to 18 years lived in the family with federal poverty income. Approximately 24% of the mothers said they had trouble in paying medical care for child, and 26% also said they could not take the child to a pediatrician because of the cost for medical care. For the child's use of preventive care, 33% of the mothers did not plan to take their child to the pediatrician at all, and approximately 68% of the mothers said they returned to the same provider for child's care. One fourth of the mothers reported trouble in paying for medical care, which had prevented them from taking their children to the pediatrician.

Table 4. Financial barriers to health care and use of preventive care

Variables	Total Sample N=320
Financial barriers	
1. Health insurance (including Medicaid) during the past 12 months	
Never or few months	34.1%
Most or all year	65.9%
2. Trouble in paying medical care for your child in the past year	
A lot or some trouble	23.9%
A little or not trouble at all	86.1%
3. You have to pay something at the visit	
Always or often	37.5%
Rarely or never	62.4%
4. A schedule given for payment of medical care	
Yes	39.2%
No	60.8%
5. Getting reimbursed from any medical insurance program	
Always or often	9.6%
Rarely or never	90.4%
6. Cost prevents you from taking your child to the pediatrician	
Always or often	25.5%

<Table 4> Continued

Variables	Total Sample N=320
Rarely or never	74.5%
7. If without insurance, cost prevents you from taking your child to the pediatrician	
Always or often	59.0%
Rarely or not at all	41.0%
Use of preventive pediatric care	
1. Frequencies of planned visits	
Not at all	33.0%
One time per year	35.1%
Two times or more per year	31.9%
2. Continuity of care (Return to the pediatrician)	
Yes	68.2%
No	31.8%

3. Bivariate Analysis Results Associated with Pediatric Services

Frequencies of planned visits: The factors of having health insurance (beta coefficient = .18; p< .05) and the extended clinic hours on weekends (beta coefficient = .19; p< .01) were significantly related to the frequencies of planned pediatric visits. While social network's beliefs of childhood immunization and regular pediatric visits were not related significantly, the mother's benefits were related to the planned visits with statistical significance (beta coefficient = .15; p< .05).

Continuity of care (Return to the same provider): Perceived burden of care costs was significant factors related to continuity of care. While being given a payment schedule increased the likelihood of the return to the pediatrician (OR = 2.94, 95% CI = 1.21-7.13), mothers who perceived a burden for care costs were less likely to return to the

pediatrician (OR = 0.69, 95% CI = 0.49-0.96). The variables related to provider's attitudes are among important factors found in the bivariate analysis. If the pediatrician gave the mother enough time to talk about her concerns for child's care, the mother would more likely to return to the provider. Also, a reminder sent for the next appointment and a telephone call the day before to confirm the appointment were positively associated with the mother's decision to continue the medical care. The extended clinic hours during weekday evenings were an important factor for predicting continuity of care.

Table 5. Bivariate analysis of independent measures affecting use of preventive pediatric care

Factors	Frequency of Planned Visits B Coefficient	Return to the Pediatrician Odds ratios (95% CI)
Socio-demographic characteristics		
1. Length of residence in their community	-0.03	0.98 (0.90-1.05)
2. Mother's Education	0.07	0.95 (0.88-2.63)
3. Family ethnicity (1= Hispanic ethnicity; 0= Other ethnicity)	-0.02	0.87 (0.70-2.62)
Mother's health beliefs		
1. Perceived benefit to regular pediatric visits (1=A lot or some; 0= A little or not at all)	0.15*	0.96 (0.87-2.62)
2. Perceived benefits to childhood immunizations (1=A lot or some; 0= A little or not at all)	0.04	0.76 (0.54-1.09)
Social norms (Social network's beliefs)		
1. Importance of regular pediatric visits (1= Very or somewhat; 0= Not too or not at all)	0.09	0.05 (0.36-1.10)

<Table 5> Continued

Factors	Frequency of Planned Visits	Return to the Pediatrician Odds ratios (95% CI)
	B Coefficient	
2. Importance of childhood immunizations (1= Very or somewhat; 0= Not too or not at all)	0.10	0.91 (0.85-1.60)
Provider's characteristics		
1. Regular sites of medical care (1= Private office; 0=Public office)	0.001	0.84 (0.48-1.46)
2. The clinic open on weekends	0.19**	1.08 (0.86-1.36)
3. The clinic open on weekday evenings	0.06	1.34 (1.07-1.67)*
4. The pediatrician gives you enough time to talk about your concerns	0.06	1.78 (1.36-2.33)**
5. A reminder sent for next appointment	0.05	1.77 (1.02-3.09)*
6. Telephone call the day before to confirm appointment	-0.05	1.84 (1.05-3.23)*
Convenience in accessing care		
1. Total minutes needed to get to the clinic	0.05	1.10 (0.99-1.26)
2. More than 30 minutes waiting in the clinic	-0.12	0.66 (0.38-1.13)
3. The pediatrician is close to where you live	-0.12	0.56 (0.30-1.04)
Financial barriers		
1. Health insurance coverage	0.18*	1.16 (0.96-1.34)
2. Trouble in paying pediatric cost in the past year	-0.02	0.94 (0.73-1.22)
3. A schedule given for payment of care cost	-0.10	0.86 (0.71-1.04)
4. Getting reimbursement from any health insurance	0.04	2.94 (1.21-7.13)*
5. Cost prevents you from taking your child to the pediatrician	-0.14	0.02 (0.01-1.03)
6. If without insurance, cost prevents you from taking your child to the pediatrician	0.04	0.75 (0.56-1.01)

*p<.05, **p<0.01

4. Multivariate Analysis Results Associated with Pediatric Care Utilization

Mothers would plan medical visits more frequently if they could access the clinic office on the weekends (beta coefficient = 0.14, p = 0.04) and if their children were covered by health insurance (including Medicaid) during the past 12 months (beta coefficient = 0.23, p = 0.01). However, the mother's perceived benefits to pediatric care were not predictors the planned visits in the multivariate model.

The provider's attitude towards communicating with mothers about their concerns increased the likelihood of mothers' returning to the pediatrician for their child's care by 2 times (OR = 2.10, 95% CI = 1.24-3.55) in this sample. Mothers with a payment schedule for care costs were almost 4 times more likely to continue child's care than mothers who did not have the schedule (OR = 3.85, 95% CI = 1.32-11.22).

Table 6. Multivariate Analysis of independent measures affecting use of preventive pediatric care

Factors	Frequency of Planned Visits ¹⁾	Return to the Dentist ²⁾ Odd Ratios 95% CI
	β Coefficient	
1. Health insurance coverage	0.23 ** (p= 0.01)	
2. Cost prevents you from taking your child to the pediatrician		0.76 (0.48-1.18)
3. A schedule given for payment of medical care		3.85* (1.32-11.22)
4. Mother's perceived benefit to regular pediatric visits	0.11 (p=0.56)	

<Table 6> Continued

Factors	Frequency of Planned Visits ¹⁾	Return to the Dentist ²⁾
	β Coefficient	Odd Ratios 95% CI
5. Total minutes needed to get your child to the pediatrician office		
6. The clinic open on weekday evenings		1.03 (0.72-1.49)
7. The clinic open on weekends	0.14* (p= 0.04)	
8. The pediatrician give you enough time to talk about your concerns.		2.10** (1.24-3.55)
9. A reminder sent for next appointment		0.65 (0.21-2.03)
10. Telephone call the day before to confirm appointment		2.04 (0.71-5.94)

Note: 1) Multiple Regression Model: F=4.30 (p= .001)

2) Multiple Logistic Model: -2 log Likelihood: 108.13, Initial -2 log Likelihood: 130.79

* p<.05, ** p<.01

V. Discussion and Conclusions

This means that the children were in profound unmet care need. The factors, which have been commonly cited as predictors of health service use, such as income, education, and length of residency in their community, and ethnicity, did not add significantly to prediction of preventive health use in this study (Shone et al, 2005; Kahn, Wilson & Wise, 2005; Zlotnick & Soman, 2004). This might be a reason that this

study population had been stratified within the homogeneous socio-demographic context.

This study found that non-financial factors, such as extended clinic hours or provider’s attitudes, take role in increasing pediatric visits and continuity of pediatric care. The limited access to providers and facilities was found as negative implications for delivery services. Conversely, pediatrician’s availability on weekends or weekday evenings can facilitate for mothers to seek pediatric care for their children. Health insurance coverage is the most important enabling factor when obtaining a regular source of preventive care. A regular source of care leads to continuity and quality of care (Kim, 2004; Morris et al., 2004). Lack of health insurance coverage has been the most consistent finding causing underutilization of health services for low-income population in previous studies (Zlotnick & Soman, 2004; Morris et al, 2004; Reid, Hurtado & Starfield, 1996). It is important for the mothers in this study to find ways to reduce the burden of care costs (e.g., a schedule given for payment) to ensure continuity of care. The findings in this study suggest that for reducing financial barriers, health policy makers need to put more efforts to expand the income ceiling of the Medicaid eligibility so that the more children could use health care through the Medicaid coverage.

In predicting health care-seeking behaviors, this study employed a theoretical framework from the primary health care model of Barabara Starfield (1995) to assess the availability and characteristics of health service use. Based on the Starfield’s model, health services research would be enriched by examining psychosocial process with taking into account enabling variables within economic context such as the availability of providers and scope of insurance coverage. The significant enabling factors found in this study, such as health insurance coverage,

availability of provider in extended clinic hours, and a payment schedule for cost, are consistent with the processes in the Starfield's theory.

As this study addresses the issues concerning the pediatrician's attitudes, a pediatrician has a critical role in improving children health because many children may initiate their first health care after birth with a pediatric visit (Hinman et al., 2002). This study finding regarding the importance of parent-provider communication is also supported by previous study findings. In the study of Nobile and Drotar (2003), they pointed out that communication with pediatrician increases parental satisfaction with care, as well as adherence to recommendation. Klerman's (1992) also found that role of pediatrician's communication influences the parent's decision about health care for their children. According to Klerman's study, lack of time is found as the most substantial barrier to communication is lack of time. Despite time constraint, it is necessary pediatricians to allow parents to voice their concerns about their child's health problems.

This study provides empirical data on potential access indicators, which can impact on the receipt of pediatric services. It is believed that this data on specific factors are informative in improving access to care at the neighborhood level for low-income children. As for the limitation of this research method, this study data was collected from a limited geographic area in the U.S. Future research will determine if these results can be replicated in broader samples of children living in poverty. The multivariate results also suggest that a considerable amount of variance in predicting outcome measures remains to be explained. Additional the variables in these models might be necessary to account for the unexplained variance. For example, the effects of community resources (e.g., pediatrician-to-population ratio) on use of health services should be

explored in further research. A report from the office of Minority Health (Stewart et al., 2002) "Assuring Cultural Competence in Health Care", addresses the need to develop community profiles and prepare needs assessment for specific populations in a particular service area. This study's findings suggest the need for effective interventions and illustrate the importance of directions for community health promotion initiatives, which should be culturally appropriate for these populations. The study results are also intended to facilitate the design of interventions so as to enhance access to preventive medical care for children in low-income families. The Healthy People 2010, published by the U.S. Department of Health and Human Services (2000), cites improving health care use for low-income populations as one of the goals to be achieved over the next ten years. Therefore, in order for enhancing access to care, health care professionals should help to address the barriers associated with poverty to utilization of child health care by promoting a broad range of public policies.

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Summary

대도시 빈곤계층 아동의 예방의료 서비스 이용도에 대한 연구: 정기적인 의료이용도와 의료의 계속성

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인구계층간의 의료 이용도의 차이는 공중보건에서 심각한 문제점으로 지적되고 있으며, 이러한 불평등한 격차를 줄이기 위한 여러가지 중재방안의 필요성이 지적되어 왔다. 빈곤계층 의료 이용도의 부족은 높은 질병발생과 밀접한 관련성이 있는 것으로 알려져 왔다. 특히 빈곤계층 아동은 그렇지 않은 아동에 비해 천식, 납중독 등에 대한 질병발생률이 높으며, 질병에 의한 사망률도 높은 것으로 나타났다.

이 연구에서는 사회 생태학적 모델에 근거하여 경제적인 요인과 비경제적 요인들이 빈곤계층 아동의 예방의료 서비스 이용도에 미치는 영향을 알아보았다. 예방의료의 이용도는 대상자의 건강에 대한 가치관, 지식, 또한 의료제공자의 태도들이 중요하게 관련되어 왔다. 미국의 대도시의 빈곤계층 지역에 거주하는 아동의 어머니들을 대상으로 선정하여 의료이용을 예측할 수 있는 중요요인들과 장애요인들을 알아보았다. 주민의 30% 이상이 Federal Poverty Level에 해당하는 3군데의 지역사회를 연구지역으로 선정하여, Random Sampling 방법으로 연구 대상자를 모집하였다. 본 연구에 사용된 요인들은 Health Beliefs Model과 Social-ecological Model에 근거하여 선정하였으며, Multivariate Regression Analysis를 이용하여 예측변수들(predictors)을 알아보았다.

연구결과, 저녁 혹은 주말까지 연장된 의료제공시간과 의료보험혜택은 정기적인 아동의 의료서비스 이용을 증가시켰다. 의료제공자의 태도 즉 대상자와의 충분한 의사소통을 위한 시간이 주어진 경우에는 2배 이상 진료의 follow-up의 가능성이 있으며, 의료비용의 부담감이 줄어드는 경우 계속

적인 의료(Continuity of Care)의 가능성이 4배 정도 높게 나타났다.

본 연구에서 비경제적인 요인들 즉 의료전달체계에 관련된 요인과, 의료 제공자의 태도들이 중요하게 나타난 것은 주목할 만하다. 빈곤층을 위한 중재방안을 계획시에는 경제적인 요인(의료보험 수혜) 외에도 본 연구 결과와 같은 비경제적인 요인들도 중요하게 고려되어야 한다. 미 보건국이 The Healthy People 2010 의 목표 중 하나로 빈곤층 아동의 의료서비스 이용도의 향상을 제시한 것 같이, 이를 위한 효율적인 중재방안의 필요성이 증가되고 있다. 특히 의료이용의 격차가 심한 고위험 지역사회를 대상으로한 중재방안 계획시, 대상자의 사회환경과 관련된 문화적 특성은 실제적 접근방법(Cultural Competent Interventions) 에서 반드시 고려되어야 할 중요한 요소이다.