5-2014

Prevalence of health education for lifestyle behaviors in primary care clinics

Victoria Bradford
University of Arkansas, Fayetteville

Prevalence of Health Education for Lifestyle Behaviors in Primary Care Clinics

Victoria Bradford
Honors Thesis
May 2014
Mentor: Dr. Bart Hammig

University of Arkansas
Department of Health, Human Performance and Recreation

Abstract

Health education is an important growing focus in preventative medicine nationwide. Topics spanning from nutrition and exercise to injury and illness avoidance are being implemented as part of the educational and training process in medical schools across the United States. We sought to examine the prevalence of health education counseling provided by primary care personnel during patient visits. Additional analyses were conducted to determine factors associated with the provision of patient health education by physicians and nurses. METHODS: A nationally representative sample of patients presenting to primary care settings in the U.S. with data obtained from the 2007-2010 National Ambulatory Medical Care Survey was analyzed. Descriptive analyses and logistic regression analyses were used to examine whether medical providers counsel their patients on health and lifestyle behaviors. Data analysis was done using STATA statistical software. RESULTS: Findings indicated that the typical likelihood of a provider offering lifestyle behavior counseling was consistently low. The lowest amount of education was offered for tobacco use/exposure (2.8%, 95% CI: 2.5-3.1) and the highest was for diet and nutrition (12.5%, 95% CI: 11.6-13.4). Further analysis using logistic regression methods will elucidate other covariates that impact provider education practices. These covariates will include time spent with patients, age and gender of patient, and provider type (physician, nurse practitioner, etc.). CONCLUSIONS: Health education focusing on lifestyle behaviors may play an important role in promoting positive lifestyle behavior changes among patient populations. However, our findings indicate that counseling for risk factor modification and health promotion are occurring at a very low level.

Introduction

Health education is an important and growing focus in the medical field, public health, and community improvement projects nationwide. Topics spanning from nutrition and exercise to injury and illness avoidance are being implemented as education programs in medical facilities, schools, and community centers across the United States (HHS, 2013). Additionally, health counseling on these topics is becoming an important part of patients' experience in primary care offices, with a one-on-one approach offering more personalized education for each patient to help eliminate health disparities (van der Heide et al., 2013).

Health education has been proven to improve both knowledge and treatment outcomes of people with a variety of health conditions. Caregivers of children with asthma who received counseling and education on the children's disease showed a significantly lower amount of visits to the emergency department due to asthma-related symptoms two years after the education intervention (Rastogi, Madhok, & Kipperman, 2013). The caregivers' increased awareness of the pathophysiology of the disease, how to control symptoms, and how to avoid triggers influenced their scores on aptitude tests and decreased trips to the hospital immediately following the intervention (Rastogi, Madhok, & Kipperman, 2013). Similarly, culturally tailored health education provided to diabetic African Americans increased participants' self-efficacy for controlling their diabetes and significantly improved their HDL cholesterol and HbA1c values over a 6-month period (Peek et al., 2012). These statistically significant results were found in a similar study that showed people who received health education while at a primary care clinic were significantly more capable of managing their diabetes (Sachmechi et al., 2013).

Difficulty providing health education is pervasive for a variety of reasons. Lack of providers willing to educate, time constraints, and lack of patients' health literacy are some of the most widespread hindrances. These barriers need to be overcome, because there is potential for significant health improvements coming from increased health education. Patients who receive both treatment and health counseling when they visit a primary care office have an advantage and higher probability of better quality of life.

Methods

Dr. Bart Hammig and I utilized STATA Statistical Software to analyze the data found in the National Ambulatory Medical Care Survey. The National Ambulatory Medical Care Survey (NAMCS) is an annual survey conducted by the Centers for Disease Control given to office-based physicians and mid-level practitioners nationwide who are engaged in direct patient care (CDC, 2009). The survey provides data on the demography of patients, as well as information about their diagnoses, future treatment, and health management (CDC, 2009). The sample was of approximately 125,000 people.

We analyzed a nationally representative sample of patients presenting to primary care settings in the U.S. with data obtained from the 2007-2010 National Ambulatory Medical Care Survey. Descriptive analyses and logistic regression analyses were used to examine whether medical providers counsel their patients on health and lifestyle behaviors. Frequency of education provision was analyzed for the topics of injury prevention, diet/nutrition, exercise, tobacco education, and weight reduction. A linear regression was also done for each of the education topics with a focus on which categories received the most education. The categories included sex, age, race, provider type, time spent with provider, and number of past visits.

Results

Findings indicated that the typical likelihood of a provider offering lifestyle behavior counseling was consistently low (Table 1). The lowest amount of education was offered for tobacco use/exposure (2.8%, 95% CI: 2.5-3.1) and the highest was for diet and nutrition (12.5%, 95% CI: 11.6-13.4). 3.2% of patients received injury prevention education (95% CI: 2.8-3.7), 8.6% received exercise education (95% CI: 7.8-9.5), and 3.8% received weight reduction education (95% CI: 3.4-4.2).

Predictors of health counseling among patients in United States primary care clinics varied by topic, but gender, race, and time in minutes spent with providers were the most statistically significant (Table 2). Data was controlled for age, provider type, and number of times a patient has seen the provider, and these categories were insignificant. Using linear regression, each predictor was analyzed in the categories of type of health education. Within the people who received injury prevention education, males were not significantly more likely to receive it (OR=1.1, 95% CI: 1.0-1.2). Asians were not more likely than whites to receive this education (OR=1.7, 95% CI: 1.0-2.9), and neither were blacks (OR=0.8, 95% CI: 0.6-1.0). Other races were 0.6 times less likely than whites to receive injury prevention education (95% CI: 0.5-0.9). Time spent with provider increased injury prevention education increasingly with each 5-minute interval. When compared to patients who received 10 minutes or less, 11-15 minutes with a provider increased education by 1.8 times (95% CI: 1.4-2.4). For 16-20 minutes, chances increased by 2.7 (95% CI: 2.0-3.6), and for more than 20 minutes, likelihood was 3.9 times higher (95% CI: 2.8-5.4).

Similarly, males were 1.1 times more likely to receive education on diet/nutrition (95% CI: 1.05-1.2). Asians were most likely to receive this education (1.5, 95% CI: 1.2-1.9), with races other than black, white, and other races being the least likely (0.7, 95% CI: 0.6-0.8). Again, time spent with provider increased diet/nutrition education provision with each 5-minute interval. In the exercise category, men were even more likely than women to receive education (1.2, 95% CI: 1.1-1.3). Asians were again the most likely to receive health education, with 1.6 times higher of a chance (95% CI: 1.2-2.3), and other races were the least likely, with 0.7 times of a chance (95% CI: 0.6-0.9). Time spent with provider also increased chances with each interval, but less drastically, with 1.4 at 11-15 minutes (95% CI: 1.1-1.9), 1.7 at 16-20 minutes (95% CI: 1.3-2.3), and 2.0 times likelihood at greater than 21 minutes (95% CI: 1.5-2.7).

Regarding health education for tobacco use/exposure, men were again 1.2 times more likely to receive it (95% CI: 1.1-1.4). Race was less of a factor in this category, with white, black, and Asian people receiving about the same likelihood of health education. Other races, however still had a lower chance of health education reception (0.6, 95% CI: 0.4-0.8). Time spent with provider was similar to the other categories by increasing with each time interval. Finally, in the category of weight reduction education, men were not significantly more likely to receive education over women (OR=1.1, 95% CI: 0.98-1.2). Within the race subset, blacks were the most likely in this category by 1.4 times (95% CI: 1.1-1.8). Races marked as “other” were less likely to receive weight reduction education than blacks, whites, and Asians (OR=0.7, 95% CI: 0.6-0.9). Time spent with providers increased chances as the time intervals increased, doubling patients’ chances once time was greater than 20 minutes (OR=2.0, 95% CI: 1.5-2.8).

Table 1: Percent of Primary Care Patients Receiving Health Counseling.

	Number	Percent	95% CI
Injury Prevention			
Yes	3481	3.2%	(2.8-3.7)
No	121548	96.8%	(96.3-97.2)
Diet/Nutrition			
Yes	14115	12.5%	(11.6-13.4)
No	110914	87.5%	(86.6-88.4)
Exercise			
Yes	9836	8.6%	(7.8-9.5)
No	115193	91.4%	(90.5-92.2)
Tobacco Use/Exposure			
Yes	3630	2.8%	(2.5-3.1)
No	121399	97.2%	(96.9-97.5)
Weight Reduction			
Yes	4140	3.8%	(3.4-4.2)
No	120889	96.2%	(95.8-96.6)

Table 2: Predictors of Health Counseling Among Patients Presenting to U.S. Primary Care Clinics

	Crude OR (95% CI)
Injury Prevention	
Gender	
Female	1.00
Male	1.1 (1.0-1.2)
Race	
White	1.00
Black	0.8 (0.6-1.0)
Asian	1.7 (1.0-2.9)
Other	0.6 (0.5-0.9)
Time Spent With Provider (minutes)	
0-10	1.00
11-15	1.8 (1.4-2.4)
16-20	2.7 (2.0-3.6)

21+	3.9 (2.8-5.4)
Diet/Nutrition	
Gender	
Female	1.00
Male	1.1 (0.99-1.1)
Race	
White	1.00
Black	1.3 (1.1-1.5)
Asian	1.5 (1.2-1.9)
Other	0.7 (0.6-0.8)
Time Spent With Provider (minutes)	
0-10	1.00
11-15	1.5 (1.2-1.9)
16-20	1.9 (1.6-2.4)
21+	2.3 (1.8-2.8)
Exercise	
Gender	
Female	1.00
Male	1.2 (1.1-1.3)
Race	
White	1.00
Black	1.1 (0.9-1.4)
Asian	1.6 (1.2-2.3)
Other	0.7 (0.6-0.9)
Time Spent With Provider (minutes)	
0-10	1.00
11-15	1.4 (1.1-1.9)
16-20	1.7 (1.3-2.3)
21+	2.0 (1.5-2.7)
Tobacco Use/Exposure	
Gender	
Female	1.00
Male	1.2 (1.1-1.4)
Race	
White	1.00
Black	0.99 (0.8-1.2)
Asian	0.9 (0.5-1.5)
Other	0.6 (0.4-0.8)
Time Spent With Provider (minutes)	
0-10	1.00
11-15	1.5 (1.1-1.9)
16-20	1.6 (1.3-2.1)
21+	2.3 (1.7-3.0)
Weight Reduction	
Gender	
Female	1.00
Male	1.1 (0.98-1.2)
Race	
White	1.00
Black	1.4 (1.1-1.8)
Asian	0.8 (0.5-1.2)
Other	0.7 (0.6-0.9)
Time Spent With Provider (minutes)	
0-10	1.00
11-15	1.4 (1.1-2.0)

16-20	1.6 (1.1-2.2)
21+	2.0 (1.5-2.8)

Discussion

This research has indicated that primary care clinics in the United States are doing a very subpar job at providing the health education that has proven to be so crucial in improving patient outcomes. Regarding the percentages of patients who received counseling in one of the five areas, the finding that patients receive education less than 15% of the time at the most is appalling. Factors that could have skewed this could include an overlooking of the question, lack of understanding of what education includes, or various other survey errors.

When analyzing the predictors of health education provision, the most constant associated factor is time spent with provider in minutes. As providers spend more than ten minutes with patients, the patients' chances of health education quickly increase. If more than 20 minutes are spent, it can increase chances by up to 4 times. Race was also a fairly constant indicator of health education provision. Whites and other races were consistently receiving less education. This could be for a variety of reasons, but shows that the practices that are being implemented in offices that minorities frequent need to become more widespread. The same needs to be put into effect based on gender.

According to Neushotz and Fitzpatrick, there are a variety of ways primary care providers can implement higher levels of health education, specifically in the area of drug abuse. These include involving community leaders, implementing interdisciplinary education programs, and improving translational abilities to increase understanding (Neushotz & Fitzpatrick, 2008). Additionally, an Israeli primary care clinic found that if people received an intervention program that included reminders, lectures, and personal

approach from a staff member, they were significantly more likely to perform certain healthy behaviors, such as receiving immunizations (Abramson, Avni, Levi & Miskin, 2010).

Overall, the findings show that there is a severe gap in the knowledge of the necessity of health education and the provision of it. Although some subsets of people are receiving more education, the overall statistics on provision are strikingly low.

Conclusions

Health education focusing on lifestyle behaviors may play an important role in promoting positive lifestyle behavior changes among patient populations. However, our findings indicate that counseling for risk factor modification and health promotion are occurring at a very low level. Because time spent with providers is one of the main indicators of health education provision, providers should seek to spend as much time as possible with patients. If this is not plausible for a provider's schedule, primary care clinics need to be hiring educators who will take the time to inform patients on how to change risk factors and live in the healthiest way possible.

References

Abramson, Z.H., Avni, O., Levi, O., & Miskin, I.N. (2010). Randomized trial of a program to increase staff influenza vaccination in primary care clinics. *Annals of Family Medicine 8(4),* 293-298.

Centers for Disease Control (2009). *National Ambulatory Medical Care Survey.* Retrieved from http://www.cdc.gov/nchs/ahcd/about_ahcd.htm.

Morgan, P.A., Abbott, D.H., McNeil, R.B., and Fisher, D.A. (2012). Characteristics of primary care office visits to nurse practitioners, physician assistants and physicians in United States Veterans Health Administration facilities, 2005 to 2010: a retrospective cross-sectional analysis. *Human Resources for Health, 10,* 42.

Neushotz, L.A & Fitzpatrick, J.J. (2008). Improving substance abuse screening and intervention in a primary care clinic. *Archive of Psychiatric Archives, 22(2),* 78-86.

Peek, M.E., Harmon, S.A., Scott, S.J., Eder, M., Roberson, T.S., Tang, H., & Chin, M. H. (2012). Culturally tailoring patient education and communication skills training to empower African-Americans with diabetes. *Translational Behavioral Medicine, 2(3)*, 296-308.

Rastogi, D., Madhok, N., & Kipperman, S. (2013). Caregiver asthma knowledge, aptitude, and practice in high healthcare utilizing children: effect of an educational intervention. *Pediatric Allergy, Immunology, and Pulmonology, 26(3),* 128-139.

Sachmechi, I., Wang, A., Kim, P., Reich, D., Paine, H., & Salvador, V.B. (2013). Impact of diabetes education and peer support group on the metabolic parameters of patients with Diabetes Mellitus Type 1 and Type 2. *British Journal of Medical Practitioners.* 6(4). 635-641.

U.S. Department of Health and Human Services (2013). *Healthy People 2020: Educational and Community Based Programs.* Retrieved from http://healthypeople.gov/2020/topicsobjectives2020/nationaldata.aspx?topicId=1.

Van der Heide, I., Wang, J., Droomers, M., Spreeuwenberg, P., Rademakers, J., & Uiters, E. (2013). The relationship between health, education, and health literacy. *Journal of Health Communication 18(1),* 172-184.