

**Health Services Research**

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## Patient Age Influences Perceptions About Health Care Communication

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**Objective:** *The study's objective was to determine if a patient's age is independently associated with how he/she perceives interactions with health care providers.* **Methods:** *We used a secondary, cross-sectional analysis of nationally representative data from the 2002 Medical Expenditure Panel Survey (MEPS). We measured the independent association between patient age and six outcomes pertaining to communication and decision-making autonomy, while simultaneously controlling for gender, race, ethnicity, family income, educational attainment, census region, rural residence, insurance status, and usual source of care.* **Results:** *Compared to patients  $\geq 65$  years, patients ages 18–64 were less likely to report that their provider "always" listened to them, "always" showed respect for what they had to say, and "always" spent enough time with them.* **Discussion:** *Patient perceptions of health care interactions vary by age. A better understanding of how and why age is associated with patient-provider communication could be useful to design practice-level interventions that enhance services and also to develop national policies that improve health care delivery and health outcomes.*

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Health care providers can influence patients to make healthier lifestyle choices, such as stopping smoking, increasing physical activity, making healthy dietary modifications, and complying with cancer screening recommendations.<sup>1,2</sup> Capitalizing on this influential relationship depends, in part, on whether or not these two groups can effectively communicate with one another.<sup>3</sup> Effective communication between patients and providers helps to optimize counseling interactions and has a significant influence on patient behaviors and health outcomes.<sup>3-6</sup> Thus, the pursuit of a better understanding of factors that may influence patient-provider interactions is essential for promoting health and preventing disease.<sup>7</sup>

One recent study, conducted by Rutten et al, used a representative sample of households in the United States to explore factors associated with patients' perceptions about communication. They found that patients with access to a continuity provider and health insurance were significantly more likely to report bet-

ter patient-provider communication.<sup>3</sup> These findings are not surprising considering the wealth of evidence about the benefits of health insurance and a continuity of care relationship.<sup>8-11</sup> More surprising is that Rutten et al did not find differences in perceived communication based on sociodemographic characteristics.<sup>3</sup> In contrast, previous studies have suggested that providers communicate less effectively with patients who are members of racial and ethnic minority groups, with older patients, and those who have lower educational attainment.<sup>12-15</sup> Gender has also been found to influence patient perceptions of communication risk.<sup>16</sup>

Cumulative evidence from these studies indicates that additional research is needed.<sup>3</sup> In reviewing similar literature about factors influencing patient satisfaction, patient age has been identified as a characteristic often found to have the strongest associations with satisfaction.<sup>17</sup> Although studies have yielded conflicting results with respect to the magnitude and direction of association between patient satisfaction and age, they suggest that age significantly influences patient experiences in health care settings and deserves further study.<sup>17,18</sup>

In this study, we focused specifically on age as a predictor of patients' perceptions of interactions with

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health care providers with the following objectives: (1) to explore demographic and other characteristics of different age groups among US patients, (2) to compare patients in different age groups who had at least one recent health care visit and how they perceived communication with health care providers during the visit(s), and (3) to determine if patients from different age groups who identified a usual source of care had differing perceptions about how their continuity provider(s) involved them in health care decision making.

## Methods

### Data Source

This cross sectional study was a secondary analysis of data obtained from the 2002 Medical Expenditure Panel Survey (MEPS) files, sponsored and made available to the public by the Agency for Health Care Research and Quality (AHRQ).<sup>19</sup> The MEPS Household Component survey collected data from a subsample of the National Health Interview Survey and contains health services utilization information for a nationally representative sample of civilian, noninstitutionalized persons in the United States.<sup>20</sup> The 2002 MEPS used a stratified multi-stage area probability design in which certain groups (eg, low income, racial minorities) were over-sampled.

MEPS households were visited five times during a 2-year period, and in-depth personal interviews were conducted with a reference person who provided information about everyone in the household. MEPS respondents were queried on such topics as demographic characteristics, self-reported health status, health insurance coverage, and access to, use of, and satisfaction with health care services.

Our first exploratory analysis of age-related characteristics included all MEPS participants over the age of 17 (unweighted  $n$  = approximately 26,000, with small variation for missing data on each individual item). Our second analysis was restricted to MEPS participants over the age of 17 who had visited a health care provider in the 12 months immediately prior to the fielding of the survey (unweighted  $n$  = approximately 16,700). Our third analysis focused on adult respondents to MEPS who reported having a usual source of care (unweighted  $n$  = approximately 18,000). This research was reviewed and granted exemption by the Oregon Health and Sciences University Institutional Review Board.

### Study Variables

**Dependent Variables.** The selection of outcome variables was based on recent theoretical frameworks describing key attributes of patient-centered communication and patient preferences in primary care.<sup>4,21</sup> With the help of these conceptual guides—limited by the MEPS questionnaire for secondary analysis—we identified six MEPS survey items pertaining to in-

terpersonal relationships, information exchange, and patient involvement in decision-making during the clinical encounter. Among MEPS respondents who had visited a health care provider in the previous 12 months, we assessed responses to the following four questions: (1) “How often did providers listen carefully to you?” (2) “How often did providers explain things so you understood?” (3) “How often did providers show respect for what you had to say?” and (4) “How often did providers spend enough time with you?” Among MEPS respondents who reported having a usual source of care (USC), we assessed responses to the two questions: (1) “If there were a choice between treatments, how often would a provider at your USC ask you to help make the decision?” and (2) “How often does a provider at your USC give you some control over your treatment?” Responses to these items were reported on a 4-point scale (always, usually, sometimes, never).

Approximately half of the respondents reported “always” to each of the six questions, and the other half were distributed over the other three responses. So, for the purposes of conducting logistic regression analyses, the responses were dichotomized as “always” and “not always,” constructing two relatively equal groups. In analyzing responses to a Likert scale, isolating either “always” or “never” responses is the best approach when participants include people with only one contact and those with more than one contact during the year. It is optimal to “always” communicate well in health care settings, so we chose to isolate this response rather than the “never” response.

**Independent Variables.** The independent variable of primary interest was the patient’s age. We used established MEPS age groupings: 18–24 years, 25–44 years, 45–64 years, and  $\geq 65$  years. Based on theoretical models of health services utilization described by Aday and Andersen, and others that outline patient characteristics and system factors influencing health care service utilization,<sup>22</sup> we initially selected several demographic and socioeconomic characteristics to include in multivariable analyses: gender, race, ethnicity, family income, educational attainment, census region, urban/non-urban residence, and health insurance status. For the models examining those adults who had a recent health care visit (past 12 months), we also included whether or not the individual had a usual source of care. In  $\chi^2$  analyses, all of the covariates had a significant association ( $P < .05$ ) with at least one of the six outcomes; therefore, all factors were kept in the model.

### Analytical Strategy

Descriptive and bivariate statistics were initially obtained for all adults in the MEPS, based on age group (Table 1). We used  $\chi^2$  analyses to detect overall differences across the age group categories and each of the

Table 1

## Demographic Characteristics of US Adults, By Age, From the 2002 Medical Expenditure Panel Survey

Demographic Variable	Weighted Percentage of Respondents in Each Age Group <sup>a</sup> (unweighted n=approximately 26,000)			
	18–24 years (12.6% of total)	25–44 years (39.4% of total)	45–64 years (31.7% of total)	≥ 65 years (16.3% of total)
<b>Gender**</b>				
Male	50.6	49.2	48.5	42.5
Female	49.4	50.8	51.5	57.5
<b>Race**</b>				
White	79.3	80.3	83.5	87.7
Black	13.7	12.3	10.6	8.4
American Indian	1.0	0.9	0.8	0.5
Asian	4.0	5.0	3.9	2.5
Native Hawaiian	0.5	0.3	0.2	0.2
Multiple races	1.4	1.2	1.1	0.6
<b>Ethnicity**</b>				
Hispanic	17.6	15.9	8.5	6.0
Not Hispanic	82.4	84.1	91.5	94.0
<b>Family income**</b>				
Poor	16.0	10.6	8.3	10.6
Near poor	4.9	3.6	2.8	6.7
Low income	14.4	13.1	9.0	20.4
Middle income	33.1	34.1	26.2	29.4
High income	31.6	38.7	53.8	33.0
<b>Completed high school**</b>				
Yes	62.3	86.8	86.9	69.7
No	37.7	13.2	13.1	30.3
<b>Census region*</b>				
Northeast	17.1	19.4	19.4	21.5
Midwest	23.3	22.4	22.9	22.5
South	35.7	35.1	35.7	36.1
West	24.0	23.1	22.1	19.9
<b>Urban/rural**</b>				
MSA	81.5	83.8	80.3	77.3
Non-MSA	18.5	16.2	19.7	22.7
<b>Health insurance**</b>				
Any Private	65.9	75.8	80.4	60.3
Public	11.4	7.7	7.9	39.2
Uninsured	22.7	16.5	11.7	0.5
<b>Usual source of care**</b>				
Yes	65.1	70.5	85.1	94.0
No	34.9	29.5	14.9	6.0

MSA—Metropolitan Statistical Area

a—column percentages=approximately 100%, variations due to rounding to nearest tenth.

\*  $P < .05$  in the  $\chi^2$  analysis for overall demographic differences across age groups.\*\*  $P < .001$  in the  $\chi^2$  analysis for overall demographic differences across age groups.

demographic covariates. Then, for the first multivariable analyses, the sample was limited to those MEPS adults who had seen a health care provider in the 12 months preceding the 2002 survey. Descriptive analyses were conducted among this subgroup to determine the relationship between demographic characteristics and the initial four outcome variables (patient perceptions of physician communication) (Table 2).

A series of logistic regression models were created to determine the strength of associations between the patient age predictor variable and the outcome variables, while controlling for several factors (Table 3). Factors selected as covariates for inclusion in the models were based on theoretical models as well as significant descriptive associations. In the final multivariable analyses, we selected MEPS participants who reported

Table 2

US Adults Reporting Positive Perceptions of Health Care Provider Communication

Demographic Characteristics	% Reporting Provider "Always" Listened Carefully to Them <i>Unweighted n=16,669 [weighted %]<sup>a</sup></i>	% Reporting Provider "Always" Explained Things So They Understood <i>Unweighted n=16,700 [weighted %]<sup>a</sup></i>	% Reporting Provider "Always" Showed Respect for What They Had to Say <i>Unweighted N=16,781 [weighted %]<sup>a</sup></i>	% Reporting Provider "Always" Spent Enough Time With Them <i>Unweighted N=16,773 [weighted %]<sup>a</sup></i>	% Reporting Provider "Always" Asks Person to Help Decide <i>Unweighted n=17,674 [weighted %]<sup>b</sup></i>	% Reporting Provider "Always" Gives Person Some Control Over Treatment <i>Unweighted n=18,087 [weighted %]<sup>b</sup></i>
<b>Total US adults</b>	55.2%	56.9%	58.9%	45.7%	52.2%	50.1%
<b>Gender</b>						
Male	56.2%	57.6%	59.6%	<b>46.9%</b>	51.8%	49.7%
Female	54.5%	58.1%	58.5%	<b>44.9%</b>	52.6%	50.4%
<b>Age group</b>						
18–24 years	<b>51.5%</b>	<b>57.9%</b>	<b>54.9%</b>	<b>40.4%</b>	<b>48.0%</b>	48.0%
25–44 years	<b>50.9%</b>	<b>56.3%</b>	<b>55.6%</b>	<b>41.4%</b>	<b>50.9%</b>	50.9%
45–64 years	<b>56.2%</b>	58.9%	<b>59.6%</b>	<b>47.0%</b>	<b>53.5%</b>	53.5%
≥ 65 years	<b>63.0%</b>	<b>60.4%</b>	<b>65.8%</b>	<b>53.9%</b>	<b>54.7%</b>	54.7%
<b>Race</b>						
White	<b>54.7%</b>	<b>57.8%</b>	<b>58.4%</b>	<b>45.1%</b>	53.2%	<b>51.1%</b>
Black	<b>63.4%</b>	<b>63.9%</b>	<b>67.5%</b>	<b>52.9%</b>	50.4%	<b>47.1%</b>
American Indian	<b>54.2%</b>	<b>63.6%</b>	<b>54.3%</b>	<b>48.1%</b>	46.2%	<b>46.6%</b>
Asian	<b>47.8%</b>	<b>49.2%</b>	<b>51.2%</b>	<b>41.5%</b>	41.0%	<b>39.0%</b>
Native Hawaiian	<b>46.4%</b>	<b>60.5%</b>	<b>48.0%</b>	<b>45.5%</b>	36.1%	<b>37.2%</b>
Multiple races	<b>44.8%</b>	<b>48.1%</b>	<b>50.6%</b>	<b>37.2%</b>	43.2%	<b>38.5%</b>
<b>Ethnicity</b>						
Hispanic	<b>57.5%</b>	<b>59.0%</b>	<b>63.1%</b>	<b>46.0%</b>	46.0%	<b>42.6%</b>
Not Hispanic	<b>55.0%</b>	<b>57.8%</b>	<b>58.5%</b>	<b>45.7%</b>	52.9%	<b>50.8%</b>
<b>Family income</b>						
Poor	56.4%	<b>56.9%</b>	59.1%	46.9%	46.9%	<b>43.7%</b>
Near poor	55.7%	<b>53.8%</b>	59.5%	46.3%	56.4%	<b>54.2%</b>
Low income	57.2%	<b>57.4%</b>	59.7%	46.0%	50.4%	<b>47.8%</b>
Middle income	54.2%	<b>57.9%</b>	58.1%	45.5%	51.5%	<b>48.8%</b>
High income	55.1%	<b>58.5%</b>	59.2%	45.5%	54.1%	<b>52.6%</b>
<b>Completed high school</b>						
Yes	54.4%	57.9%	58.4%	<b>44.9%</b>	52.9%	51.0%
No	59.3%	57.9%	61.7%	<b>49.7%</b>	49.3%	46.0%
<b>Geographic residence</b>						
Northeast	<b>58.2%</b>	<b>61.0%</b>	<b>62.9%</b>	<b>49.4%</b>	<b>54.7%</b>	<b>53.4%</b>
Midwest	<b>57.5%</b>	<b>59.4%</b>	<b>60.0%</b>	<b>46.8%</b>	<b>52.8%</b>	<b>50.7%</b>
South	<b>55.0%</b>	<b>56.9%</b>	<b>58.2%</b>	<b>45.7%</b>	<b>54.2%</b>	<b>51.5%</b>
West	<b>50.3%</b>	<b>55.0%</b>	<b>55.2%</b>	<b>41.2%</b>	<b>46.0%</b>	<b>43.7%</b>
<b>Residence location</b>						
MSA	54.5%	57.5%	58.7%	<b>44.8%</b>	<b>51.1%</b>	<b>49.9%</b>
Non-MSA	58.3%	59.3%	60.1%	<b>49.5%</b>	<b>56.9%</b>	<b>54.6%</b>
<b>Health insurance</b>						
Any private	<b>54.6%</b>	<b>57.8%</b>	<b>58.8%</b>	<b>44.9%</b>	<b>53.4%</b>	<b>51.4%</b>
Public	<b>61.0%</b>	<b>60.5%</b>	<b>62.5%</b>	<b>52.4%</b>	<b>48.7%</b>	<b>45.4%</b>
Uninsured	<b>50.4%</b>	<b>53.8%</b>	<b>53.5%</b>	<b>41.1%</b>	<b>48.0%</b>	<b>46.0%</b>
<b>Usual source of care (USC)</b>						
With a USC	<b>56.4%</b>	<b>57.9%</b>	<b>59.9%</b>	<b>46.7%</b>	NA	NA
Without a USC	<b>47.1%</b>	<b>51.3%</b>	<b>52.3%</b>	<b>39.0%</b>	NA	NA

MSA—Metropolitan statistical area

a—Weighted percentages pertain to the total civilian, noninstitutionalized US adult population who had visited a health care provider in the previous 12 months (unweighted n varies slightly by category, as noted).

b—Weighted percentages pertain to the total civilian, noninstitutionalized US adult population who reported having a usual source of care site (unweighted n varies slightly by category, as noted).

Bold percentages signify *P* values <.05 in  $\chi^2$  analyses, comparing overall demographic differences across groups.

Table 3

## Significant Differences in US Adults' Perceptions About Provider Interactions, by Age

2002 Medical Expenditure Panel Survey (MEPS) Questions Regarding Physician Communication	# Responding "Always" to Questions Regarding Physician Communication [Weighted n]	Unadjusted OR (95% CI) (Odds of responding "always" to the key questions)	Adjusted OR (95% CI) (Odds of responding "always" to the key questions)
<b>Among US Adults Who Visited a Health Care Provider in the Year Prior to the 2002 MEPS</b>			
<b>Provider listened carefully to them*</b> (Unweighted n=16,699)			
<b>Age groups</b>			
18–24 years	7,152,574	0.62 (0.55, 0.71)	0.65 (0.57, 0.75)
25–44 years	25,470,391	0.61 (0.55, 0.67)	0.64 (0.58, 0.72)
45–64 years	27,232,563	0.75 (0.68, 0.83)	0.77 (0.69, 0.86)
≥ 65 years	18,063,640	1.00	1.00
<b>Provider explained things so they understood*</b> (Unweighted n=16,700)			
<b>Age groups</b>			
18–24 years	7,649,190	0.80 (0.70, 0.91)	0.85 (0.74, 0.97)
25–44 years	28,317,720	0.85 (0.76, 0.94)	0.87 (0.78, 0.97)
45–64 years	28,637,292	0.94 (0.84, 1.05)	0.94 (0.84, 1.06)
≥ 65 years	17,370,313	1.00	1.00
<b>Provider showed respect for what they had to say*</b> (Unweighted n=16,781)			
<b>Age groups</b>			
18–24 years	7,647,649	0.64 (0.56, 0.72)	0.65 (0.57, 0.74)
25–44 years	27,979,116	0.65 (0.58, 0.73)	0.66 (0.59, 0.74)
45–64 years	28,997,477	0.77 (0.69, 0.86)	0.76 (0.68, 0.86)
≥ 65 years	18,945,310	1.00	1.00
<b>Provider spent enough time with them*</b> (Unweighted n=16,773)			
<b>Age groups</b>			
18–24 years	5,613,964	0.58 (0.50, 0.67)	0.61 (0.53, 0.71)
25–44 years	20,792,000	0.60 (0.54, 0.67)	0.65 (0.58, 0.72)
45–64 years	22,869,339	0.76 (0.68, 0.84)	0.79 (0.70, 0.89)
≥ 65 years	15,530,428	1.00	1.00
<b>Among US Adults With a Usual Source of Care in 2002</b>			
<b>Provider included them in health care decisions**</b> (Unweighted n=17,674)			
<b>Age groups</b>			
18–24 years	7,449,798	0.76 (0.66, 0.89)	0.78 (0.66, 0.92)
25–44 years	26,509,377	0.86 (0.77, 0.96)	0.85 (0.75, 0.96)
45–64 years	27,457,416	0.95 (0.85, 1.07)	0.91 (0.80, 1.03)
≥ 65 years	15,582,479	1.00	1.00
<b>Provider gave them control of treatment**</b> (Unweighted n=18,087)			
<b>Age groups</b>			
18–24 years	7,436,120	0.85 (0.73, 1.00)	0.88 (0.74, 1.04)
25–44 years	26,014,230	0.93 (0.83, 1.03)	0.92 (0.81, 1.03)
45–64 years	27,303,748	1.04 (0.92, 1.18)	0.99 (0.87, 1.13)
≥ 65 years	14,983,495	1.00	1.00

OR—odds ratio

CI—confidence interval

\* In the multivariable analyses, ORs were adjusted for gender, race, ethnicity, family income, educational attainment, census region, urban/rural residence, health insurance status, and an identified usual source of care.

\*\* In the multivariable analyses, ORs were adjusted for gender, race, ethnicity, family income, educational attainment, census region, urban/rural residence, and health insurance status.

having a USC. A similar descriptive and multivariable analysis process was performed to explore the independent influence of patient age group—while controlling for all other covariates—on respondents' perceptions of autonomy in health care decision making (Table 3).

SUDAAN software was used to conduct statistical analyses and to make national estimates with variance adjustment required for the complex sampling design of the 2002 MEPS (SUDAAN Release 9.0.1, Research Triangle Institute, Research Triangle Park, NC). In all tables provided, the reported percentages have been weighted to produce nationally representative estimates.

## Results

### *Demographics of Different Age Groups*

In 2002, approximately 13% of the US adult population was between the ages of 18 and 24. Seventy-one percent were ages 25–64, and just slightly more than 16% were  $\geq 65$  years. The demographics of different age groups differed significantly (Table 1). For example, adults  $\geq 65$  years were more likely female, white, and not Hispanic. More than 94% of people  $\geq 65$  years reported having a USC, compared to only 65.1% of those between the ages of 18–24. Nearly all of those 65 and older reported having health insurance, reflective of universal coverage through Medicare for US citizens in this age group.

In contrast, almost 23% of adults ages 18–24 had no health insurance. High school completion rates were lower among the oldest and the youngest cohorts. A higher percentage of adults between 18–24 years were in the lowest income group, compared to the groups over 24 years.

Older adults were more likely to reside in rural areas and/or the Northeast. A slightly higher percentage of younger adults resided in the Western census region.

### *Descriptive Statistics*

The first four MEPS questions described in Table 2 were asked of US adults who had visited a health care provider, and the final two questions were asked of those who reported having a USC. Among the group of US adults who reported a visit to a health care provider, older patients ( $\geq 65$  years) were more likely to report positive perceptions of communication across all four measures. In three out of the four outcomes, the percentages of respondents from the oldest group ( $\geq 65$  years) who “always” had positive interactions with their health care providers were more than 10% greater than the youngest group (18–24 years) (Table 2). The age associations were stepwise, with the middle age groups (25–44 years and 45–64 years) falling somewhere in between the youngest and oldest age groups. Respondents were consistently more likely to report positive perceptions of communication with health care provid-

ers were Hispanic and/or had public health insurance. In addition, participants living in non-metropolitan statistical areas and those living in the Northeast responded more favorably to these four questions. In the final two questions asked of respondents with a USC, there was also an association between older patients and more positive perceptions of shared decision making; however, these associations were less pronounced.

### *Multivariable Analyses*

After controlling for the effects of all demographic and socioeconomic characteristics in the models, the associations between patient age and different perceptions of health care communication persisted (Table 3). Among US adults with a recent health care visit, compared to patients  $\geq 65$  years, patients between the ages of 18–24 were less likely to report that their provider “always” listened to them (adjusted OR=0.65, 95% CI=0.57–0.75), “always” explained things so they could understand (adjusted OR=0.85, 95% CI=0.74–0.97), “always” showed respect (adjusted OR=0.65, 95% CI=0.57–0.74), and “always” spent enough time with them (adjusted OR=0.61, 95% CI=0.53–0.71).

Patients ages 25–44 were similarly less likely to report positive perceptions of communication. The perceptions of patients between 45–64 years were somewhat closer to the oldest group. Among adults with a USC, those between the ages of 18 and 44 were less likely to report that their USC health care provider(s) included them in health care decision making compared to the oldest group (over age 64). There was no significant difference between the oldest group and the 45–64 year olds. Responses to the last question about how often a USC provider gives them some control over treatment showed no significant differences among the various age groups.

## Discussion

Our findings suggest that age is associated with how patients perceive communication with health care providers. This association was strongest among US adults with a recent health care visit who responded to questions pertaining to interpersonal relationships and information exchange with providers. Patient age was less associated with perceptions about how USC providers engaged patients in shared health care decision making.

The explanation for age-related differences in how patients perceive health care communication is unclear. Do younger patients have higher expectations for patient-provider communication that influence the dynamics of the encounter and perceptions about their care? Does age itself influence how different patients perceive similar interactions? Or, do physicians simply communicate differently with older patients?

In one study of geriatric health care encounters, one of the most significant factors affecting physician-patient interactions was patients' expectations for consultation time.<sup>23</sup> When considering unmet patient expectations, it has been suggested that older patients are more easily satisfied with care due to their greater familiarity with the shortcomings of the health care system and being more forgiving of its inadequacies.<sup>17</sup> The expectations of older patients may also be closer to standards set by the health care system based on a lengthier history of dealing with the system, so older populations will more likely report that health care interactions met their expectations.<sup>24</sup>

While closely linked to expectations, patients' values and preferences also set a frame of reference for how patients perceive interactions. In a recent systematic review examining patient characteristics associated with preferences for care, age was one of the most significant factors. Younger patients placed greater emphasis on the expediency and aggressive nature of their care and valued having control over their own health care. In contrast, older patients preferred continuity of care with a primary care provider who made most health care decisions for them. They valued expectant management and care for the whole person rather than the individual disease or symptom.<sup>25</sup>

Theories about patient satisfaction also focus on the balance between patient expectations or preferences and the care delivered. If actual care closely matches expectations, the patient is fulfilled. If, on the other hand, there is a large mismatch, the patient feels a discrepancy. On another level, equity theorists hypothesize that patients also perceive their care based on how it measures up to the care of others.<sup>26</sup> In the interpretation of our study, the knowledge about how age influences preferences might explain why older study respondents were more likely than younger ones to report positive perceptions of the patient-provider communication measures most valued by this age group but differed less in regard to autonomy in health care decision making and control over treatment decisions.

While patient preferences for care and unmet expectations clearly influence how they perceive health care interactions, age may also play a direct role in how these patients are treated. Older patients are more challenging and complex, so perhaps physicians do take a different approach toward them.<sup>27</sup> One study suggests that age independently affects the attitudes of clinicians.<sup>28</sup> Another study found physicians spend less time with older patients.<sup>29</sup> A third study observed that geriatric patients at a new clinic for the first time favor interactions with supportive providers who find ways to engage the patient but also provide some structure for the visit.<sup>30</sup> Similarly, another study of encounters among an elderly population reported the need for direct, interactive verbal communication and that patient

compliance depends, in part, on how well physicians are able to effectively communicate in this way.<sup>23</sup>

While our findings contradict previous results and raise further questions about the explanation for age-related differences in patient perceptions of health care communication, the associations between different perceptions of communication depending on a patient's age warrant further study and attention. Further, communication plays a crucial role in successful health care delivery, so any associations need to be taken seriously. The MEPS dataset, and other nationally representative surveys, could be analyzed over time to determine if differences by age are trending apart or closer together as well as to study how certain factors are directly interacting with age variables. Another more labor-intensive research method to further investigate these interesting questions might involve the use of standardized patients of different ages with the same complaint. Educational techniques using faculty reviews of resident videotaped encounters could be structured to observe inherent differences in interactions with patients of different ages. In addition, future age-related studies should more closely examine significant differences between "older" and "younger" elderly populations (ie, separate the  $\geq 65$  group into 65–74, 75–84, and 85+ for comparisons).

This study adds further depth to discussions about optimizing patient-provider communication by identifying potential age groups to target with improvement efforts. At the practice level, individual clinicians may need to cater key elements of communication to a patient's age, diagnoses, and differing expectations.<sup>31-33</sup> Educational programs focused on teaching important communication skills must include how to assess patient health literacy skills and how to elicit patient communication preferences to improve shared decision making.<sup>4,5</sup> These educational efforts and interventions to improve communication at the point of care can be targeted toward the training of future generations of family physicians but must also reach clinicians in current practice.<sup>34</sup>

### Limitations

There are important limiting factors to consider in the interpretation of this study analysis. First, this study only reports on the US population, and the cross-sectional format limits causal inferences. Second, as in all surveys, MEPS responses are subject to possible reporting error and response bias not accounted for by statistical adjustments. For example, because of the in-person interviewing techniques used in MEPS, older people as a group might be more eager to please the interviewer, thus providing disproportionately positive answers, increasing the likelihood of social response bias as a possible explanation for the age differences noted here.

Third, this study uses secondary analysis of existing data; therefore, it is limited by the information collected by the MEPS. We were only able to control for the patient-related variables shown to influence health care interactions that were available in the MEPS. Thus, our analysis could not take into account health care provider characteristics. Age and/or other characteristics of the provider may influence his/her style of interaction and how it is perceived by a patient. For instance, we were unable to explore how concordance between provider and patient influences patient perceptions of communication dynamics.<sup>35</sup>

## Conclusions

This study suggests that patient perceptions of communication in health care settings vary by age. A better understanding of these age-related differences and other factors influencing health care communication could be useful to improving health care service delivery, both at the point of care and in the broader national context.

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