

**Clinical Research and Methods**

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## Health Behavior Counseling in Primary Care: Provider-reported Rate and Confidence

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**Background and Objectives:** *This study's purpose was to identify variables associated with primary care providers' self-reported rate of health behavior change counseling and confidence in counseling abilities. Of particular interest was the association of provider personal health behavior with reported rate of counseling and confidence in counseling abilities.* **Methods:** *Surveys were mailed to primary care providers. Self-report items assessed rate of health behavior change counseling, perceived importance of counseling, extent of counseling training, confidence in counseling abilities, and clinician personal health behavior.* **Results:** *One hundred providers completed the survey, with 31% reporting difficulty counseling patients on a health behavior that they struggle with themselves. Provider type (eg, nurse or physician) and extent of training in health behavior change counseling were significantly associated with reported rate of counseling in a multiple regression model (adjusted  $R^2=.30$ ). Years in practice, extent of training, and importance of counseling were significantly associated with confidence in counseling in a multiple regression model (adjusted  $R^2=.31$ ).* **Conclusions:** *Some providers report difficulty counseling patients on behaviors that they struggle with themselves. Extent of training in health behavior counseling appears to be particularly important to both provider-reported rate of counseling and confidence to counsel.*

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Despite the fact that many health care providers recognize the importance of counseling patients on health behavior,<sup>1-3</sup> such counseling is delivered at a relatively low rate.<sup>4-8</sup> Previously identified barriers to health behavior counseling include limited time in the patient encounter, lack of reimbursement for counseling-related activities, perceived lack of counseling skills, and patient noncompliance with counseling recommendations.<sup>7,9-12</sup> These barriers may influence providers' delivery of health behavior counseling and their confidence in successfully counseling patients on health behavior change.

Less well understood is the influence of primary care providers' personal health behavior (eg, frequency of exercise, healthy eating behavior, and smoking status)

on counseling rate and confidence to counsel patients on health behavior. While training providers in strategies to enhance patient motivation to make lifestyle behavior change, some clinicians comment that they "feel like a hypocrite" or "get too self-conscious" when talking to patients about health behavior change when they themselves struggle with the same health behavior. We are unaware of any previous study assessing primary care provider personal health behavior on provider-reported rate of health behavior change counseling and confidence in abilities to counsel.

We anticipated that personal health behavior (eg, higher levels of exercise, non-smoking status, and frequent healthy eating behavior), previous training in health behavior counseling, and higher rating of perceived importance of health behavior counseling would be associated with higher counseling rate and higher confidence to counsel. In our study, we defined "health behavior counseling" as spending any amount of time discussing, educating, assisting, advising, or providing resources to patients regarding their health behaviors. These are counseling strategies used by a

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variety of health care providers in primary care. To extend upon previous studies investigating delivery of health behavior change counseling that focused exclusively on the experiences of physicians,<sup>6-12</sup> we included multiple provider types (nurses, physician assistants, nurse practitioners, and physicians).

This study's goal was to identify potentially modifiable variables associated with primary care provider counseling rate and confidence for counseling. Variables found to be significantly associated with provider counseling behavior and confidence to counsel could be emphasized in provider training programs.

## Methods

### *Participants and Procedure*

Institutional Review Board approval was obtained. All physicians and nurses who deliver clinical services in the primary care areas associated with Mayo Clinic Rochester were invited to complete a brief survey. A paper copy of the survey, a study information sheet, and a preaddressed return envelope were sent to 185 clinicians. The survey was completely anonymous, and no attempt was made to identify or contact non-respondents.

### *Measures*

**Participant Characteristics.** Self-report items were used to assess age, gender, weight, height, type of practitioner, and years in clinical practice. For data analysis, practitioner types were categorized as physicians, physician assistants, nurse practitioners, and registered nurses.

**Physical Activity.** The Godin Leisure-Time Exercise Questionnaire<sup>13</sup> was used to assess self-report of exercise. This validated questionnaire asks participants to estimate how many times during a 7-day period they engaged in strenuous, moderate, and mild exercise for periods of more than 15 minutes.<sup>14</sup>

**Smoking Status.** An eight-item measure recommended by the National Institutes of Health Behavior Change Consortium<sup>15</sup> was used to assess current smoking status. For data analysis, we coded respondents as either current smokers or ex-smokers/never-smokers.

**Healthy Eating Behavior.** The following item was developed to assess provider self-reported healthy eating behavior: "Over the past week, how successful have you been in making healthy eating choices for your meals and snacks?" Response options ranged from 1=not at all successful (did not make healthy eating choices) to 9=very successful (always made healthy eating choices).

### **Confidence for Health Behavior Change Counseling.**

The following Likert-scale item was used to assess provider confidence in counseling ability: "In general, how confident are you in your abilities to counsel your patients on health behaviors?" Response options ranged from 1 (not at all confident) to 9 (extremely confident).

### **Self-reported Rate of Counseling Behavior.**

The following Likert-scale item was used to assess provider self-reported rate of health behavior counseling: "Approximately what percentage of your patients do you counsel on some type of health behavior (eg, diet, exercise, smoking)?" Response options ranged from 0% (none of my patients) to 100% (all of my patients).

### **Perceived Importance of Health Behavior Change Counseling.**

The following Likert-scale item was used to assess perceived importance of counseling: "How important is counseling patients about health behaviors such as smoking, exercise, and diet?" Response options ranged from 1 (not at all important) to 9 (extremely important).

### **Perceived Impact of Personal Health Behavior on Counseling Attitudes and Behaviors.**

Four true or false items were developed to assess providers' perception of the effect of their own health behavior on their confidence and perceived difficulties in counseling patients on those same health behaviors. These items are listed in Table 1. Participants were also asked to rate the following item from 1 (not at all) to 9 (very much): "To what extent does your own health behavior impact your counseling of patients about these same behaviors?"

### *Data Analysis*

Descriptive data were summarized as appropriate per data type (mean, standard deviation [SD], frequency). Linear regression analyses were used to assess the association of each of the following variables to provider self-reported rate of health behavior counseling (dependent variable): age, gender, provider type, years in clinical practice, extent of training in health behavior change counseling, confidence in counseling ability, perceived importance of health behavior change counseling, body mass index, and personal health behaviors (exercise frequency, healthy eating, and smoking status). Variables significantly associated with rate of health behavior counseling were then simultaneously entered into a multiple regression model. The same procedure was used to assess the relationship of these same study variables on confidence for health behavior counseling (dependent variable). Variables significantly associated with confidence in counseling in the individual regres-

Table 1

## Perceived Impact of Personal Health Behavior on Counseling Attitudes and Behaviors

|  | True (%) | False (%) |
|--|----------|-----------|
| 1. I am most likely to counsel patients on the health behaviors that I successfully engage in myself.                  | 69       | 31        |
| 2. I feel most confident counseling patients on the health behaviors that I successfully engage in myself.             | 86       | 14        |
| 3. I have trouble counseling patients on a health behavior that I struggle with myself.                                | 31       | 68        |
| 4. I feel like my patients will respond negatively if I counsel them on a health behavior that I struggle with myself. | 18       | 81        |

sion analyses were entered into a multiple regression model, with the exception of age, which was removed due to its high correlation (.83) with years in clinical practice. Prior to initiating data analysis, an alpha level of .05 was selected.

Table 2

## Participant Characteristics (n=100)

|  | Mean (SD)     | Percentage |
|--|---------------|------------|
| Gender   |               |            |
| Female   |               | 59.6       |
| Male   |               | 40.4       |
| Age  | 45.35 (9.06)  |            |
| Type of practitioner   |               |            |
| Physician (MD or DO)   |               | 57.0       |
| Registered nurse   |               | 30.0       |
| Physician assistant or nurse practitioner                                    |               | 13.0       |
| Years in clinical practice   | 16.46 (10.18) |            |
| Body mass index  | 26.00 (5.80)  |            |
| Smoking status   |               |            |
| Current smoker   |               | 2.0        |
| Ex-smoker  |               | 10.0       |
| Never smoker   |               | 88.0       |
| Exercise frequency (Godin measure)   | 37.55 (24.59) |            |
| Healthy eating   | 6.28 (1.54)   |            |
| Self-reported rate of health behavior counseling (% of patients you counsel) | 72.40 (25.07) |            |
| Extent of training in counseling   | 5.17 (1.79)   |            |
| Perceived importance of counseling   | 8.47 (1.01)   |            |
| Confidence in counseling ability   | 7.15 (1.26)   |            |

**Results***Response Rate and Participant Characteristics*

A total of 152 surveys were returned (82% response rate), but the majority of the surveys returned from licensed practical nurses (52) were incomplete and had to be excluded. Our analyses are limited to the remaining 100 providers. Participant characteristics are presented in Table 2. Our sample consisted of clinicians who, on average, were somewhat overweight, mostly non-smokers, and who had more than 15 years of clinical experience.

*Provider Perception of Impact of Personal Health Behavior on Counseling*

The mean rating for the item "To what extent does your own health behavior impact your counseling of patients about these same behaviors?" was 6.1 (SD=.52), on a scale where 9=very much. Table 1 presents participant responses (true or false) to statements about the perceived influence of their personal health behavior on their counseling behavior and attitudes.

*Variables Associated With Provider-reported Rate of Counseling*

Table 3 presents the results of univariate linear regression analyses with self-reported rate of health behavior counseling as the dependent variable. Provider personal health behavior was not associated with reported rate of counseling. Type of provider (ie, physicians more likely to report higher rates of counseling) and greater extent of training in health behavior counseling remained significantly associated with provider-reported rate of counseling within the multiple regression model (Table 4;  $F=11.816$ , adjusted  $R^2=.30$ ).

*Variables Associated With Provider Confidence in Counseling Abilities*

Tables 5 and 6 present individual and multiple regression analyses, respectively, with confidence for

health behavior counseling as the dependent variable. More years in clinical training, greater extent of counseling training, and greater perceived importance of counseling were significantly associated with provider confidence to counsel in a multiple regression model (F=15.88, adjusted R<sup>2</sup>=.31).

**Discussion**

The majority of participants reported being most likely to counsel patients and most confident to counsel patients on behaviors in which they are successfully engaging in themselves. Further, approximately one third of participants reported difficulty counseling patients in behaviors with which they themselves

Table 3

Variables Associated With Self-reported Rate of Health Behavior Counseling:  
Summary of Individual Regression Analyses

| Variable                           | B     | SE    | Beta | t Test | P Value |
|------------------------------------|-------|-------|------|--------|---------|
| Provider type                      | -9.01 | 2.41  | -.35 | -3.74  | <.001   |
| Gender                             | 16.66 | 4.90  | .33  | 3.40   | <.01    |
| Age                                | .23   | .28   | .08  | .83    | .41     |
| Years in clinical practice         | -.14  | .25   | -.06 | -.55   | .58     |
| Extent of training in counseling   | 5.50  | 4.30  | .40  | 4.23   | <.001   |
| Perceived importance of counseling | 4.04  | 2.76  | .16  | 1.63   | .11     |
| Confidence in counseling ability   | 4.56  | 1.96  | .23  | 2.33   | .02     |
| Body mass index                    | -.44  | .43   | -.11 | -1.02  | .31     |
| Exercise frequency                 | .20   | .10   | .19  | 1.94   | .06     |
| Healthy eating                     | 1.55  | 1.64  | .10  | .95    | .35     |
| Smoking status                     | -7.70 | 18.05 | -.04 | -.43   | .67     |

SE—standard error

Table 4

Variables Associated With Self-reported Rate of Health Behavior Counseling:  
Summary of Multiple Regression Analysis (n=100)

| Variable                         | B     | SE   | Beta | t Test | P Value |
|----------------------------------|-------|------|------|--------|---------|
| Provider type                    | -7.05 | 2.50 | -.30 | -2.82  | <.01    |
| Gender                           | 9.26  | 5.04 | .18  | 1.84   | <.07    |
| Extent of training in counseling | 4.54  | 1.30 | .32  | 3.50   | <.01    |
| Confidence in counseling ability | 3.17  | 1.85 | .16  | 1.72   | .10     |

SE—standard error

Table 5

Provider Variables Associated With Confidence for Health Behavior Counseling:  
Summary of Individual Regression Analyses

| Variable                           | B    | SE  | Beta | t Test | P Value |
|------------------------------------|------|-----|------|--------|---------|
| Provider type                      | .13  | .13 | .10  | 1.04   | .30     |
| Gender                             | .30  | .26 | -.12 | -1.15  | .26     |
| Age                                | .03  | .01 | .25  | 2.50   | .01     |
| Years in clinical practice         | .03  | .01 | .26  | 2.70   | <.01    |
| Extent of training in counseling   | .26  | .07 | .37  | 3.93   | <.001   |
| Perceived importance of counseling | .48  | .12 | .38  | 4.08   | <.001   |
| Body mass index                    | <.01 | .02 | .01  | .11    | .91     |
| Exercise frequency                 | .01  | .01 | .16  | 1.63   | .11     |
| Healthy eating                     | .02  | .08 | .02  | .20    | .85     |
| Smoking status                     | .87  | .90 | .10  | .96    | .34     |

SE—standard error

Table 6

## Variables Associated With Provider Confidence to Counsel: Summary of Multiple Regression Analysis\*

| Variable                           | B   | SE  | Beta | t Test | P Value |
|------------------------------------|-----|-----|------|--------|---------|
| Years in clinical practice         | .03 | .01 | .26  | 3.05   | <.01    |
| Extent of training in counseling   | .25 | .06 | .35  | 4.20   | <.001   |
| Perceived importance of counseling | .44 | .10 | .35  | 4.23   | <.001   |

\* n=100

SE—standard error

struggle. However, in the regression analyses, specific personal health behaviors (ie, provider exercise frequency, healthy eating, smoking status) and body mass index were not associated with either confidence in counseling abilities or reported rate of counseling. Perhaps self-report measurement of provider personal health behaviors does not fully capture the association of provider health behavior on counseling behaviors and attitudes.

Self-report of personal health behavior is subject to bias. Perhaps more importantly, the specific health behavior may be less relevant than related constructs that were not measured in this study. For instance, it may be less important to investigate provider frequency of healthy eating or exercise and more important to assess provider perception of their appearance, body image, or concern about how their patients view them.

Our preliminary data using simple self-report items do suggest that providers perceive some connection between their perception of their own health behavior (ie, health behaviors they successfully engage in or struggle with themselves [Table 2]), their confidence to counsel, and their counseling behavior.

Although there is little research in this area, there is some evidence that physician personal behavior can be related to clinical behaviors. For instance, physicians who practice breast self-exam are more likely to perform clinical breast examinations for their patients,<sup>16</sup> and physicians reporting healthy diet-related habits are more likely to counsel their patients on nutrition.<sup>17</sup> Additional research is needed to understand the relationship between provider personal health behavior, perception of patient opinion regarding provider's health behavior, and how these issues interact and impact provider-patient communication about health behavior. Qualitative research methods could play a role in elucidating potentially important constructs (eg, provider body image, health perception) that could help explain this relationship.

Extent of training in health behavior counseling was associated with both provider-reported rate of counsel-

ing and confidence to counsel. This is consistent with previous studies that have shown that provider training in health behavior counseling increases provider confidence to provide that counseling to patients (eg, smoking cessation counseling training<sup>18,19</sup> and exercise counseling training<sup>20</sup>). Provider training has also been shown to increase counseling behavior, including the rate of counseling and the quality of counseling abilities.<sup>18-20</sup>

Physician providers reported a higher rate of health behavior change counseling than the other providers. It is important for future studies to use objective measurement of actual counseling behavior (eg, through use of trained raters, direct observation, and patient report of what occurred during the clinical encounter<sup>21-23</sup>) to better understand the relationship between provider type and counseling behavior. Because patients benefit from repeated reinforcement of health behavior change information, and because training materials and programs typically focus on one type of provider (eg, physician, pharmacist, nurse, resident<sup>18-20,24</sup>), multidisciplinary training programs that emphasize collaboration in health behavior counseling in primary care, incorporate all members of the health care team (eg, nursing staff, health educators, health psychologists), and emphasize skills for successfully referring to allied health professionals and patient education resources, may be of benefit. Further research in this area is needed to determine if multidisciplinary training could improve the rate or impact of health behavior counseling in primary care.

#### Limitations

There are limitations to this study that should be addressed in future research in this area. As mentioned above, objective, validated measurement of health behavior and counseling behavior is preferable to the single self-report items developed for use in this study. Further, we assessed general confidence in abilities to deliver health behavior change counseling and did not specifically assess confidence for overcoming barri-



ers to this counseling. Development and validation of measures that assess the various aspects of primary care provider confidence to counsel patients on health behavior change, incorporating the constructs consistent with Social Cognitive Theory and self-efficacy measurement,<sup>25</sup> would be important to further this line of research.

Another limitation is that the study sample consisted of providers in a suburban-urban location practicing in a large tertiary care medical center, and thus the findings may not generalize to dissimilar populations, especially those in rural primary care. Also, our regression analyses did not include the numerous environmental and systems-related barriers that could seriously undermine provider confidence in their abilities to counsel patients and their rate of counseling. For example, with limited clinical time, some providers may feel that although they have the skills to deliver health behavior change counseling, they don't have the sufficient opportunity to do so, thus limiting confidence in their abilities to deliver this counseling.

We were unable to use data from licensed practical nurse (LPN) practitioners in our sample. Although we believe that LPNs participate in some level of "counseling" as it was defined in our survey, most LPN participants provided comments indicating that they did not think that their professional role included health behavior change counseling (eg, "As an LPN, I am unable to counsel initially but can reinforce what has been done previously." "We need to follow our scope of practice here . . . LPNs cannot counsel patients"). Consequently, it is important to first pilot survey materials to all types of practitioners included in future studies to ensure that the terms are acceptable and understandable to all.

Because all providers in primary care can play a role in supporting patient health behavior change, future research should extend on this preliminary work to better understand and intervene upon the barriers (ie, interpersonal, environmental, system) to provider delivery of health behavior counseling.

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