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Clinician-Patient Communication about Physical Activity in an Underserved Population

Jennifer K. Carroll, MD, MPH[1], **Kevin Fiscella, MD, MPH**[1], **Sean C. Meldrum, MS**[1], **Geoffrey C. Williams, MD, PhD**[1], **Christopher N. Sciamanna, MD, MPH**[2], **Pascal Jean-Pierre, PhD**[1], **Gary R. Morrow, PhD, MS**[1], and **Ronald M. Epstein, MD**[1]

[1]Department of Family Medicine (KF, SCM,PJ-P, RME), the Cancer Center (JKC, KF, PJ-P, GRM, RME), and the Department of Internal Medicine (GCW), University of Rochester, New York

[2]Division of General Internal Medicine, Penn State College of Medicine (CNS)

Abstract

Introduction—The 5A (Ask, Advise, Agree, Assist, Arrange) model, used to promote patient behavior changes in primary care, can also be applied to physical activity. Our goal was to assess primary care physicians' use of the 5As in discussions about physical activity with underserved populations.

Methods—We analyzed 51 audiorecorded, transcribed office visits on randomly selected patient care days and post-visit patient surveys with adults in two community health centers in Rochester, New York.

Results—The patient sample was 51% African American, predominantly female (70%), with the majority having a high school level education or less (66%) and an annual household income less than $39,000 (57%). Physical activity was discussed during 19 of the 51 visits, which included 16 (84%) visits with "Ask", ten (53%) with "Advise", four (21%) with "Agree", five (26%) with "Assist", and 0 with "Arrange" statements. Most discussions of physical activity contained several Ask or Advise statements, but few Agree, Assist, or Arrange statements.

Conclusion—Communication about physical activity that included Agree, Arrange, and Assist statements of the 5As was infrequent. Health promotion interventions in underserved populations should target these steps and prompt patients to initiate communication to improve physical activity.

Introduction

Clinical guidelines, derived from behavioral medicine frameworks, emphasize specific communication strategies for clinicians to effectively counsel their patients about various health habits. A commonly used clinical framework for health behavior counseling is the 5As guidelines, shown in Table 1[1]. The 5As paradigm, adapted from the 4As model originally developed by the National Cancer Institute for smoking cessation, has been effectively applied to several other health behaviors and has been endorsed by the United States Preventive Services Task Force as a unifying framework for behavioral counseling in primary care.[2–6] Previous studies examining the use of the 5As in communication about diet, exercise, and weight loss in adults [7, 8] found that communication about these behaviors seldom includes offers of assistance (range 14–17%) or plans for follow-up (range 3–10%). Despite a growing

Corresponding author: Jennifer Carroll, MD, MPH, University of Rochester School of Medicine, Family Medicine Research Programs, 1381 South Avenue, Rochester, NY 14620 (Jennifer_Carroll@URMC.Rochester.edu).

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evidence base demonstrating the utility of the 5A guidelines,[3,] 9 primary care practices—especially those with a large underserved population— may have difficulty implementing it. Competing demands often push primary prevention to the bottom of the agenda for many routine primary care visits.10 Yet because primary care clinicians are a major source of health behavior advice, there is a need for ways to support clinicians in providing effective counseling.

In order to design practical interventions to promote effective counseling for physical activity in community-based primary care settings, we need "real-world" data regarding actual communication that occurs – i.e., ways in which the 5As actually translate into clinical practice.

Gaps exist in our knowledge of the effectiveness of communication about physical activity with underserved populations, both because we lack "real-world" examples of specific communication, and because we do not fully understand the extent to which competing demands may influence discussion about physical activity in underserved populations. The goal of our study was to examine the actual language used by primary care physicians in communicating about physical activity with underserved populations and to analyze that language according to the 5A guidelines. We also explored whether patient characteristics or competing demands influenced discussion of physical activity. Here we define "underserved populations" as groups with low income (e.g., ≤ 200% of the federal poverty level) and/or low educational attainment (e.g., less than a high school diploma or equivalent) who may or may not be racial-ethnic minorities.

Methods

Study design, setting, and participants

We conducted a cross-sectional observational study of clinicians and their patients at two urban community health centers in Rochester, NY. The centers provide primary care to a diverse community of primarily low-income patients including African Americans, Asian Americans, Hispanics, and African, Eastern European, and Southeast Asian refugees and immigrants. Twelve of the thirteen (92%) clinicians who provided primary medical care services at the centers (eight physicians, two physician assistants, and three nurse practitioners) participated in the study. Clinicians were informed that the purpose of the study was to observe communication about health in primary care practice. We obtained written informed consent from clinicians prior to patient recruitment. Then we collected data on the primary outcome variable, the use of As in the 5A model for communication about physical activity, using both direct audiorecording of the visit and a post-visit patient survey.

Patient recruitment, enrollment, and audiorecording of office visits

Patients were recruited from the clinics on randomly selected patient care days. Patients who were eighteen years of age or older and were scheduled for a routine, same-day appointment for non-urgent problems or a health maintenance office visit with a participating clinician were told about the study before they met with their clinician. Patients were told that the purpose of the study was to examine communication between patients and their clinicians about health behaviors. Those who expressed an interest in participating met with either the primary investigator or a research assistant (SF) for further discussion and, if they agreed to participate, to give written informed consent. Consented visits were unobtrusively audiorecorded using a digital audio recorder. All medical care at the visit was per office routine. Clinicians were not blinded to whether the patient had consented to participate.

Post-visit patient survey

Patients were surveyed at the end of each clinical encounter. The survey consisted of questions regarding patient socio-demographic characteristics, health status and functioning[11, 12], health

behaviors, recall of previous communication with their clinician about physical activity,[13] and quality of the patient-physician relationship.[14]

Data coding and analyses

We developed a coding and transcription template to capture data from the audiorecorded content of the office visits. Any communication about physical activity or exercise-- for example, asking about current exercise or talk about maintaining or changing physical activity behaviors-- was coded. We did not use the 5As as a means to include or exclude discussion of activity, but rather as a means for cataloguing it or describing it when it occurred. Therefore there were no examples of activity discussions that were excluded. For each office visit, any discussion of physical activity was transcribed verbatim as described below. We also coded (1) other topics covered in the visit, (2) whether or not other health behaviors were discussed, and (3) the total duration of the visit.

Research assistants (SF, AD) trained by the primary investigator listened to all audiotapes of office encounters independently and transcribed any communication about physical activity occurring in the visit to a worksheet. To operationalize the 5A guidelines for coding of each "A" in the audiorecorded visits, we defined each A on our coding templates according to definitions adapted from prior work in the field[3, 7] as shown in Table 2.

For the analysis, we used descriptive statistics (SAS, Version 9.1, SAS Institute, Cary, NC) to report the frequency and content of communication about physical activity. We first computed the sum of each A of the 5As occurring in each office visit based on the transcriptions of the audiorecorded office visits. We used chi-square statistics to examine the association between each A of the 5As and its relationship to certain patient and visit characteristics.

We compared audiorecorded office visit and self-report (survey) data on the 5As to examine the relationship between prior and current communication about physical activity. We qualitatively analyzed the transcripts for which any discussion about physical activity occurred with a manual coding-editing approach derived from grounded theory to identify specific examples of the 5As in communication.

Neither patients nor clinicians received remuneration for participation. The study was approved by the Research Subjects Review Board of the University of Rochester.

Results

There were 134 patients scheduled for appointments on days selected for observation. Of those, 64 (48%) were excluded before they were approached because they did not meet study criteria (e.g. pediatric patients), because they missed their appointment, because of constraints on clinicians' schedules, or due to lack of an available room. Seventy patients were asked to participate in the study: Fifty-one (73%) agreed to participate and 19 (27%) refused. The most common reasons for refusal were private/sensitive issues to discuss (n=7) and lack of time (n=5).

Table 3 shows patient and clinician participant characteristics. The patient participant sample was largely underserved as indicated by the racial and ethnic composition, income, and educational levels (Table 3). The clinician participants were all trained in family medicine, predominantly female (n=10, 83%), and were a mix of family physicians (n=8, 67%) and either family physician assistants or family nurse practitioners (n=4, 33%). The majority of visits were routine follow-up appointments (ie, 15 minutes duration) with patients' primary care clinicians. Acute visits (e.g., for an "urgent care" level problem) were excluded by design.

Of the 51 participants, 49 (96%) completed post-visit surveys, 47 (92%) completed observational data, and 44 (86%) completed both observed visits and surveys. Observational data were missing for four of the 51 patients; in three cases the equipment malfunctioned; in one case the participant intentionally turned off the recorder during the visit.

Use of the 5As (Ask, Advise, Agree, Assist, Arrange) guidelines for physical activity counseling

Discussion of physical activity was noted during 19 (41%) of the 46 audiorecorded/observed patient visits. The 19 visits included 16 (84%) with "Ask" statements, ten (53%) with Advise statements, four (21%) with "Agree" statements, five (26%) with "Assist" statements, and none with "Arrange" statements.

Patterns of 5As use by clinicians

Table 3 shows the clinician-level variability in use of the 5As for the 19 visits in which the topic of physical activity came up. As Table 3 shows, the pattern of use of the 5 A terms was fairly evenly distributed among physicians and non-physicians. Ten (83%) of the 12 participating clinicians used an “Ask” statement, eight (67%) used an “Advise” statement, five (42%) used “Agree” and “Assist” statements, and none used an “Arrange” statement. The average number of A terms used for both physicians and non-physicians when the topic of physical activity came up was two (range, zero to four). In the 19 visits during which physical activity was discussed, specific activity levels (such as the type, frequency, duration, and/or intensity according to recommended levels 15, 16 occurred in just five visits. These specific recommendations occurred in the context of Advising (n=2), Agreeing (n=1) and Assisting (n=2).

Physical activity discussion by patient and visit characteristics

Table 5 shows patient and visit characteristics and their association with whether or not physical activity discussion occurred. Visits with discussions of physical activity tended to be longer (median length 19 minutes vs. 12 minutes) and to include discussion of more topics (median seven topics vs. four topics) and other health behaviors in addition to physical activity (Table 4). For example, among patients with whom physical activity was discussed (n=19), smoking was also discussed in 37% of cases (n=7 visits). Smoking was discussed only 24% of the time in visits which did not include discussions of physical activity. Discussion of physical activity was observed less frequently with African American patients, obese patients, and patients with fewer comorbidities. Based on patient survey data, only 22.4% (n=11) of patients met recommended guidelines for physical activity (three patients with whom activity was discussed, eight patients with whom it was not discussed).

Comparison of audiorecorded discussion to patient recall of physical activity discussion

Compared to audiorecorded discussion of physical activity, patient self-report (which asked about recall of 5As with their primary care clinician) demonstrated a much higher overall incidence of clinician use of each A of the 5As. Forty-one of the 49 (84%) patients who completed the questionnaire reported ever having had a discussion with their clinician regarding physical activity. Thirty-two (65%) patients reported use of an “Ask” statement (eg, “My doctor has asked me about my current activity/exercise habits”); 36 (73%) an “Advise” statement (“My doctor has given me clear, specific advice to change my activity level/exercise habits”).; 37 (76%) an “Agree” statement (“My doctor and I share in decision making about ways to improve my activity level/ exercise habits”); 32 (65%) an “Assist” statement (“My doctor helped me develop specific ideas, plans, or changes I can make to improve my activity/ exercise”); and 25 (51%) an “Arrange” statement (eg, “My doctor and I made follow-up plans to discuss how I am doing with changing my activity level/exercise”). There was modest

agreement between patients and observers as to whether physical activity was discussed during the audiorecorded visit: Six of 19 (32%) patients with whom some discussion was observed recalled no discussion when interviewed, and five of 24 (21%) patients with whom no discussion was observed reported discussion (Kappa = 0.46). Patients were much less likely to report that they had received communication from other health care staff (i.e., clinic nurses or other health professionals) compared to their recall of primary care clinician discussion about physical activity.

Discussion

Our results show that when clinicians addressed physical activity, their efforts were characterized by an emphasis on two As-- Asking and Advising -- with relatively little Agreement (i.e., collaborative goal-setting), Assistance (i.e., with identifying and overcoming barriers) or Arrangements to help the patient follow through with a physical activity program. There were seldom assessments of patients' willingness to change behavior, and few recommendations were given regarding community resources. These findings are similar to patterns of use of the 5A's in tobacco counseling [17–19] and in other studies of diet and exercise counseling in underserved populations.

The finding that the topic of physical activity was raised 41% of the time was somewhat higher than previously reported in studies of underserved populations. Yet the question of how much counseling is sufficient—and by whom— is an area of active debate. If we consider that the majority of our participants (78%) were not meeting recommended levels of activity and/or were either overweight or obese (75%), then one could argue that the observed rate of counseling was inadequate to achieve national goals. In all likelihood, a wide variety of strategies in the health care, mass media, policy, and school settings are needed. Yet intervention studies are also needed to identify efficacy of the 5As in physical activity, followed by large practical clinical trials test the effects of the As on physical activity change in primary care settings.

Although primary care clinicians are in a key position to promote physical activity, this task is challenging in a time-pressured environment with competing priorities, systems barriers, and limited resources.[10] These issues are magnified for clinicians working with underserved populations. Nevertheless, we found no evidence that discussion of a large number of concerns diminished the likelihood of physical activity counseling; in fact, the reverse may be true. Although visits in which activity was discussed were longer, they also included nearly twice as many patient concerns. A larger study would be needed to assess the relative contribution of number of concerns, demographics, obesity, and race to the likelihood of discussing physical activity.

Previous work has shown that primary care physicians spend an average of about 55 seconds per visit – though the time varies widely- providing diet and/or exercise advice to patients. Not surprisingly, less than half of patients receiving such advice were able to recall what their physician had said. In one study, an extra minute in the encounter discussing these issues was associated with a 2.5-fold increase in patient recall.[20] Perhaps, if more emphasis were placed on strategies or systems to support mutual agreement, goal setting, and specific assistance, clinicians could make better use of their limited time and see improved recall and/or positive behavioral changes in their patients.

Little is known about how the 5As model changes patient motivation for physical activity, but based on specific features of the 5As— providing assistance, intra-treatment support, access to information about available community resources, and establishing a clear plan for follow-up—seem likely to motivate patients or result in change of physical activity behaviors [21, 22].

Some of the As (albeit the least frequently observed ones—Agree, Assist, and Arrange) aim to set goals collaboratively based on the patient's willingness to change. If patients do not want to change, emphasis may be more appropriately placed on helping the patient connect their behavior to their health; in this way, Asking or Advising may reinforce patients' responsibility for changing their activity if they believe it will preserve their health. This overlaps conceptually with other behavioral models[23–26] that promote patient activation to become self-managers more explicitly by providing them with assistance in problem-solving skills.

Despite the multiple barriers to the delivery of high quality counseling, several lines of evidence support a role for expanded physician counseling for physical activity. Randomized clinical trials have shown that intensive [27] and brief 21 physician counseling have been shown to increase physical activity levels in patients, though data on long term outcomes are lacking. The Activity Counseling Trial found that when physicians were taught how to Ask and Advise patients to promote physical activity and were supported by ancillary staff and office-based systems to provide the other As, they were able to use the model efficiently and achieve a high level of satisfaction from providing it.21 The tobacco literature has determined that the 5As counseling is three times more likely to occur if clinics have support systems to remind physicians to do the counseling.28, [29] Implementation of office systems to identify sedentary individuals and facilitate the provision of support materials (e.g, chart note templates, identification systems for those at risk, and/or community resources lists) might increase 5As counseling for physical activity.

Primary care physicians have access to a large portion of the US population; 80% of adults visit a physician during a one-year period, and most of these visits are with primary care physicians.[30] Patients are often more vulnerable or concerned about their health when visiting a physician and as such are more likely to be receptive and responsive to the information they receive.[31] Patients find physician counseling useful and associated with higher satisfaction with clinical care.[32] Patients who are advised by a physician to lose weight, quit smoking, eat less fat, and/or become physically active are significantly more likely to attempt to change these behaviors than those who are not advised. [33–35] Although data from underserved populations are lacking, one study showed that low-income patients with whom physical activity was discussed were significantly more likely to attempt behavior change than high-income patients.[36]

Some data suggest that the last two As—Assist and Arrange—may be better achieved by collaboration with allied health educators, community programs, or other health care staff resources, given the competing demands that primary care clinicians face.[6,15] Because strong empirical data to support this —especially for underserved populations— are lacking, studies should address the role of ancillary professionals in delivery of counseling and the effect on activity outcomes.

Interestingly, only one audiorecorded discussion with four of the 5As was patient-initiated. While very preliminary, this observation suggests that patient-initiated discussion about physical activity may be more likely to lead to in-depth conversation (defined as more As covered); thus, clinician training plus patient activation may yield more discussion about physical activity.

Our study has several limitations. First, this study was designed to collect a preliminary set of observations to show how the 5As occur and was conducted at two community health centers. We thus had a small sample size in a narrowly defined underserved population which limits generalizability. Because we used a cross-sectional design, we were unable to assess clinician-patient communication about physical activity over time. We attempted to address this short-coming by incorporating questions about previous communication in the post-visit patient

survey, but recall may be biased, especially given the discordance we saw in patient recall compared with actual observed communication. It is possible that the three least commonly observed As (Agree, Assist, and or Arrange) require more patient involvement and dialogue and thus are more time- and effort-intensive for the clinician; therefore we would not have captured these as frequently. We did not include the clinician's perspective on recall or adequacy of communication about physical activity.

Future studies should compare the effects of physician counseling, involvement of other health professionals, and patient activation or prompting of the topic on physical activity outcomes in underserved populations. Only longitudinal studies can measure communication interventions in the "real-world setting" over time, the dose-response effect of physical activity discussions, the effect of continuity of care on the 5As, and to test whether 5A-derived communication interventions result in improved patient behaviors and/or health status.

Conclusion

Although primary care clinicians in a practice serving an urban underserved population asked and advised about physical activity, very few sought agreement about increasing activity levels, offered specific assistance to patients, or made arrangements to address physical activity. Interventions that support clinicians' efforts directly or via ancillary personnel to address challenges or barriers patients may face, help the patient to set goals and/or change activity levels, discuss specific community programs or resources, and make follow-up arrangements to address physical activity may be beneficial. While training physicians to provide physical activity counseling is important, interventions that encourage patients to prompt their clinicians may further increase clinicians discussion of physical activity in a manner that motivates behavior change.

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Table 1

Elements of the 5A Model

Counseling Activity	Description
Ask/Assess	Inquire about health behaviors, self-efficacy
Advise	Discuss health risks; Benefits of change; Review appropriate amount, intensity, and frequency of behavior
Agree	Collaboratively set physical activity goals based on patient's interest and confidence
Assist	Identify personal barriers and problem solving techniques; community opportunities for physical activity and social support
Arrange	Help the patient complete the plan by providing referrals, reminders, access to resources; specify future arrangements (follow-up visit, call, reminder) to follow-up on progress

Table 2

Definition of 5As Used for Coding of Audiorecorded Office Visits

Ask/Assess: Did the clinician ask about the patients exercise or physical activity habit in any way? Was there any discussion about initiating, maintaining, or changing physical activity levels in any way?
Advise = A clear statement that the clinician makes to the patient recommending the patient do regular physical activity. The doctor gives clear, personalized, and specific advice to change physical activity/exercise habits, which may or may not include information about personal benefits to health.
Agree = The clinician and patient collaboratively select appropriate treatment goals and tasks based on the patient's interest and willingness to change the behavior.
Assist = The clinician assists the patient to aid them in changing their physical activity/exercise plans by addressing any challenges or barriers that the patient may face. This category also refers to the doctor helping the patient strategize or come up with a plan on how the patient might actually change their exercise level to meet their goals. The doctor might also mention available community resources, programs, or referral options for physical activity/exercise programs in this step.
Arrange = The doctor and patient explicitly discuss a follow up plan. This means that the doctor schedules a follow up appointment to provide ongoing assistance and support to the patient for helping them change their exercise level. This step may also involve a referral to a program or specialist to help the patient with the exercise program (in this sense may overlap somewhat with the **Assist** step).

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Table 3

Participant socio-demographic and health status information

Clinician Participants					
	N	**%**		**N**	**%**
Gender			**Years in practice**		
Female	10	83%	Five years or less	4	33%
Male	2	17%	Up to ten years	4	33%
Clinician Specialty			Up to fifteen years	2	17%
MD	8	67%	More than 15 years	2	17%
Non-MD (PA, NP)	4	33%	**Years at health center**		
Race/Ethnicity			Five years or less	8	66%
African American	3	25%	Up to ten years	0	0%
Asian	1	8%	Up to fifteen years	2	17%
White	8	67%	More than 15 years	2	17%
			Total	12	100%
Patient Participants					
	N	**%**		**N**	**%**
Age group			**Employed**		
18–29	6	12%	Yes	16	33%
30–39	6	12%	No	17	35%
40–49	13	27%	Not reported	16	33%
50–59	10	20%	**Body Mass Index**		
60–69	9	18%	18.5–<25 (Normal)	3	6%
70+	4	8%	25–<30 (Overweight)	11	22%
Not reported	1	2%	30+ (Obese)	26	53%
Gender			Not reported	9	18%
Female	35	71%	**Number of Comorbidities**		
Male	14	29%	0	15	31%
Race/Ethnicity			1–2	15	31%
African American	25	51%	3–4	12	24%

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Clinician Participants					
	N	**%**		**N**	**%**
White	18	37%	5–8	7	14%
Other	6	12%	**Common Comorbidities**		
			Diabetes	13	27%
Percent of patients achieving recommended level of physical activity = 22.4%			Hypertension	23	47%
			CHF	4	8%
Annual income			**Education**		
< $12,000	13	27%	Less than 12 years	14	29%
$12,000 – $20,000	10	20%	HS education	18	37%
$21,000 – $39,000	5	10%	Some college	9	18%
$40,000+	4	8%	College Degree	7	14%
Not reported	17	35%	Not reported	1	2%
			Total	49*	100%

*As noted in the text above, two patient participants did not provide survey data.

Table 4

Patterns of Observed 5As Use among Clinicians

	Ask/Assess	Advise	Agree	Assist	Arrange
MD-1	[1]			[12]	
MD-2	[2] [13] [19]	[11] [13]	[11] [13]		
MD-3	[9]				
MD-4	[17]	[17]	[17]	[17]	
MD-5					
MD-6	[14] [15]	[14] [15]		[14]	
MD-7	[3]				
MD-8	[6]	[6]			
NP/PA-1	[18]			[18]	
NP/PA-2	[4] [7] [16]	[5] [7] [16]		[16]	
NP/PA-3	[8] [10]	[8]	[10]		
NP/PA-4					

[number]=visit in which an A occurred for all 19 visits in which physical activity was discussed among the 12 participating clinicians [visit number is shown to distinguish between multiple visits per clinician with As used]. For example, MD-2 used Ask statements on three separate visits coded as visits [2],[13], and [19]. “MD” refers to physician participants; “NP/PA” refers to either nurse practitioner or physician assistant participants.

Table 5

Patient and visit characteristics of visits with and without observed discussion of physical activity

Patient and visit characteristics	No Discussion of Physical Activity (N=25)	Any Discussion of Physical Activity (N=19)	Percent With Any Discussion of Physical Activity
Age group			
18–39	7	5	42%
40–59	12	8	40%
60+	5	6	55%
Not reported	1	0	0%
Gender			
1: Female	17	14	45%
2: Male	8	5	38%
Race/Ethnicity			
African American	15	8	35%
White	2	3	60%
Other	8	8	50%
Annual income			
<$12,000	7	4	36%
>$12,000	11	8	42%
Not reported	7	7	50%
Employed			
Yes	8	6	43%
No	7	8	53%
Not reported	10	5	33%
Body Mass Index			
18.5–<25 (Normal)	1	1	50%
25–<30 (Overweight)	4	6	60%
30+ (Obese)	15	9	38%
Not reported	5	3	38%
Number of Comorbidities			
0	11	3	21%
1–2	6	6	50%
3–8	8	10	56%
Years of Education			
Less than 12 years	6	8	57%
HS education	12	6	33%
Any college	7	5	42%
Median number of topics discussed	4	7	n/a
Median number of health behaviors discussed	1	2	n/a
Median visit duration (minutes)	12	19	n/a

Patient and visit characteristics	No Discussion of Physical Activity (N=25)	Any Discussion of Physical Activity (N=19)	Percent With Any Discussion of Physical Activity
Total*	25	19	43%

*Two patients with missing data are excluded.