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ORIGINAL ARTICLE

Weight management perceptions and clinical practices among gynaecology providers caring for reproductive-aged patients

E. A. Evans-Hoeker[1,2], N. S. Ramalingam[3,4] and S. M. Harden[2,4]

[1]Department of Obstetrics and Gynecology, Carilion Clinic, Roanoke, Virginia, USA; [2]Department of Obstetrics and Gynecology, Virginia Tech Carilion School of Medicine, Roanoke, Virginia, USA; [3]Translational Biology, Medicine and Health, Virginia Tech, Blacksburg, Virginia, USA; [4]Department of Human Nutrition, Foods, and Exercise, Virginia Tech, Blacksburg, Virginia, USA;

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Address for Correspondence:
E Evans-Hoeker, MD, Department of Obstetrics and Gynecology, Carilion Clinic, Roanoke, Virginia, USA. E-mail: eaevanshoeker@carilionclinic.org

Summary

Objective

Research suggests that patient and provider conversations about healthy eating and physical activity behaviours may lead to patients' increased health behaviours, access to dietary and physical activity resources, and weight management. The American College of Obstetrics and Gynecology (ACOG) has a number of weight management intervention options, but it is unclear if providers have conversations about intervention options with their patients who are of reproductive age. The purpose of this work was to evaluate the degree to which gynaecology healthcare providers offer the weight management intervention options as recommended by ACOG.

Methods

Cross-sectional study of gynaecology providers in Southwest Virginia utilizing an electronic survey to identify weight management perceptions and current clinical practices. Responses were measured using quantitative methods, and agreeability and frequency responses were measured using a 5-point Likert scale.

Results

Twenty-three of the 31 eligible providers (74.2%) completed the survey. Providers acknowledge that patients need weight management discussions and they feel comfortable and are willing to have these discussions. While physical activity recommendations were consistent among providers, they did not reflect the complete physical activity recommendations for Americans. Consistency in dietary recommendations was lacking. Although providers make recommendations for physical activity and/or diet at least sometimes, they rarely utilize other methods of weight management as outlined in the ACOG recommendations, such as referrals to other providers, programmes or medications.

Conclusions

Areas for improvement in weight management practices include frequency of counselling, consistency in dietary counselling and frequency of utilization of weight loss medications and referrals to ancillary services. These results can be used to aid the development of methods for targeting these deficiencies.

Keywords: Gynaecology, obesity, weight loss, weight management.

Introduction

In the United States, more than one in three women of reproductive age have obesity (body mass index [BMI] $\geq$ 30 kg m^2) (1). Excess pre-pregnancy weight is associated with significant maternal and fetal risks, both prenatal and intrapartum (2–9). However, less than 50% of all women of reproductive age report trying to lose weight, although weight loss attempts are often more frequent in patients with overweight and obesity (10–12). The American College of Obstetrics and Gynecology (ACOG) recommends that clinicians provide patients with

a number of weight optimization strategies: discussion of healthy lifestyle behaviour and eating, physical activity, referral to free exercise or wellness programmes at local hospitals, utilization of nutritionists, social workers, community-based fitness clubs, weight loss medications and bariatric surgery (13–16).

Although ACOG has acknowledged that a number of intervention types are necessary to improve weight status among women of reproductive age and have provided recommendations for gynaecology providers in regard to weight management in reproductive-aged women, it is not known whether providers are recommending and/or offering these options to patients. Therefore, the purposes of this study were to determine if gynaecology providers are discussing recommended weight management options with non-pregnant, reproductive-aged women and whether this counselling is inclusive of all intervention options as outlined by ACOG, when appropriate.

Methods

This cross-sectional study was approved by the Carilion Clinic Institutional Review Board. Online anonymous surveys were created using Qualtrics as part of a larger research study assessing both provider and patient perceptions and practices for weight management of reproductive-aged patients prior to and during pregnancy. The section of the survey assessing provider perceptions and practice patterns for non-pregnant, reproductive-aged patients was used to determine if current practices align with weight management options as outlined by ACOG. Many of the survey sections were developed to explore behaviours and perceptions and are not based on previously validated survey scales. However, if a validated scale was used or adapted, it is indicated, by section, in the succeeding text. Consent for participation was implied with the submission of the online survey. The survey assessed provider demographics (age, BMI, race, ethnicity, provider type, etc.). In addition, providers were queried on the following.

Current clinical practices and support of intervention types

Thirty-one items on a 5-point Likert scale ('never' to 'always' and 'strongly disagree' to 'strongly agree') were used to quantify the provider's perceptions and current weight management practices. Example frequency items included: How often do you 'review your patient's BMI during new patient visits?' and agreement items included: 'I have time to discuss weight during my patient visits'. See Appendix S1 for full survey that was distributed as part of the larger study as described earlier.

Diet and physical activity recommendations

Providers were asked to indicate their current recommendations for diet and physical activity via an open-ended response item asking, 'In your non-pregnant 21–35 year-old patients, what are your typical recommendations for [physical activity/diet]?' The authors reviewed the open-ended responses and categorized them by whether or not they were consistent with the minimum physical activity recommendations for aerobic activity and weight training as outlined by the Physical Activity Guidelines for Americans (17).

Weight loss prescription and referral recommendations

Two additional check-all-that-apply items inquired, 'Which weight loss medications do you prescribe?' and 'Who do you typically refer your patients to for assistance in weight loss?' Options for weight loss medications (none, orlistat, metformin, bupropion, phentermine, lorcaserin, phentermine-topiramate, bupropion-naltrexone, benzphetamine, diethylpropion and phendimetrazine) and referrals (nutritionist/registered dietician, exercise physiologist/personal trainer [including the hospital-sponsored programme, FitRx], psychologist/psychiatrist, family/internal medicine, bariatric surgeon, endocrinologist, commercial weight loss programme, community support group, do not refer and do not know who to refer to) were provided as well as 'other'. The Carilion Clinic medical system offers a referral-based, hospital-sponsored physical activity programme, FitRx, which is a discounted, 60-day, personal training programme involving weekly sessions. The referral for FitRx is placed by the patients' provider specifying goals such as weight loss, cardiovascular health and strengthening.

Participants

Virginia Tech-Carilion Clinic faculty and mid-level providers in the department of OB/GYN who care for reproductive-aged, non-pregnant women were invited to participate in the online survey. Providers in urogynecology, gynecologic oncology and maternal fetal medicine were excluded because of their lack of primary care practice for non-pregnant, reproductive-aged patients. In addition, the provider from reproductive endocrinology was excluded because of conflict of interest (study Principal Investigator (PI)). Providers in training (i.e. residents) were excluded because of their lack of independent practice;

however, one resident gained access to and completed the survey and was included in the data because of the anonymous nature of the responses and thus our inability to isolate the resident's responses.

Setting

At the time of the study, eligible participants provided patient care at nine clinic locations within a 60-mile radius of Roanoke, VA. In total, these clinics see approximately 400 new patients, with a range from 18 to 70 new encounters, per month. Most patients attending these medical visits pay for services via Medicaid (32%) and Anthem (28%), with the minority of patients paying via other commercial insurance (20%), self-pay (13%) and other (7% – including Medicare). Using results from a formative study that included the review of 815 electronic medical records, the overall patient population has a mean age of 26.38 (±5.8) years and is predominantly Caucasian (70%), non-Hispanic (98.9%).

Data analysis

Analyses were conducted using SPSS v. 20.0 (IBM, 2012). This work employed a convenience sample with the intent of describing current practices in a large academic medical practice with a large catchment area. Means and standard deviations of continuous variables and frequencies and proportions of nominal variables were calculated. Likert scale ratings for each weight management strategy were standardized to a *z*-distribution and compared with the mean rating to identify recommendations that providers are significantly more or less often or willing ($p < 0.05$) to provide for weight loss. The *z*-distribution assisted in the interpretation of recommendations and willingness. This method was chosen because of the small sample size and to detect any differences in responses within a scale that was not previously validated.

Results

Thirty-one providers were contacted to participate in the survey, and 23 (74.2%) responses were received. A majority of providers were Caucasian (78.3%), female (60.9%) attending physicians (60.9%), with an average age of 43.57 (10.11) years and had worked at Virginia Tech-Carilion Clinic for 10.25 (9.87) years. Based on self-reported height and weight, 39.1%, 13.1% and 17.4% of providers had a normal, overweight or obese BMI, respectively, although 30.4% did not provide height/weight data necessary to calculate BMI (Table 1).

Table 1 Provider demographics

Provider characteristics	Value
Age	43.57 ± 10.11
Years at Virginia Tech-Carilion	10.25 ± 9.87
BMI (kg/m^2)[a]	26.58 ± 5.76
Provider type[b]	
Resident physician	1/23 (4.3)
Attending physician	14/23 (60.9)
Nurse practitioner	5/23 (21.7)
Nurse midwife	1/23 (4.3)
Sex[b]	
Female	14/23 (60.9)
Male	7/23 (30.4)
Race[c]	
Caucasian	18/23 (78.3)
Asian	2/23 (8.7)
Not sure	2/23 (8.7)
Ethnicity[b]	
Hispanic	2/23 (8.7)
Not Hispanic	18/23 (78.3)
Not sure	1/23 (4.3)

Data are average ± standard deviation or *n*/*N* (%).
[a]Seven providers declined to answer.
[b]Two providers declined to answer.
[c]One provider declined to answer.

Current clinical practices and support of intervention types

Current perceptions and clinical practices are presented in Figures 1 and 2, respectively. The figures demonstrate ratings of provider frequency and agreeability for various

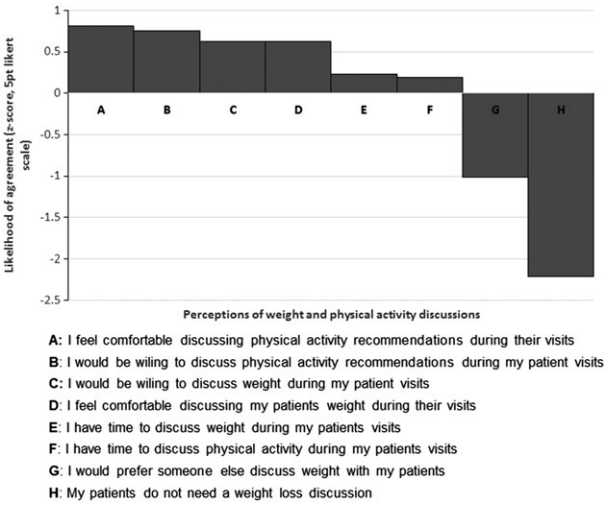
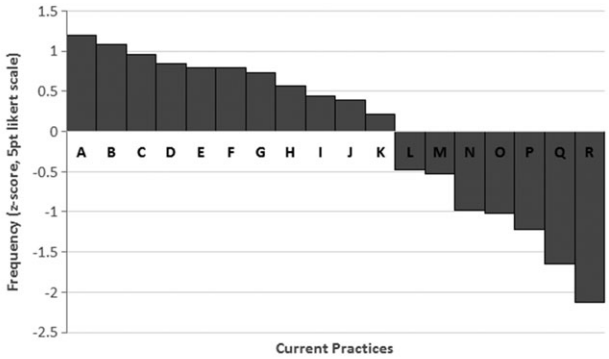


Figure 1 Provider perceptions. Ratings of provider feasibility, comfort and willingness to discuss weight and physical activity were collected using a 5-point Likert scale and are ranked and standardized to a *z*-distribution. No statistically significant differences were noted among provider perceptions.



A: Review your patients BMI during new patient visits
B: Counsel your OW/OB patient to lose weight
C: Ask about your patients physical activity
D: Counsel your patient on increased risk of pregnancy complications
E : Counsel your patient on increased risk of delivery complications
F: Review your patients BMI during follow-up visits
G: Counsel your patient on increased risk of infertility
H: Provide specific physical activity recommendations
I: Ask about your patients diet
J: Inform your patient of her BMI status
K: Provide specific diet recommendations
L: Refer your patient to another provider to assist with weight loss
M: Counsel your patient on increased risk of childhood obesity
N: Counsel your patient she should not conceive due to her BMI
O: Prescribe hospital sponsored physical activity program (FitRx)
P: Refer your patients with BMI ≥ 35to bariatric surgery
Q: Decline to provide fertility treatments based on BMI
R: Prescribe weight loss medications

Figure 2 Provider practices. Ratings of provider current practices were collected using a 5-point Likert scale and are ranked and standardized to a *z*-distribution. Providers were significantly less likely to prescribe weight loss medications (R) than all other weight management interventions ($Z = -2.13$, $p = 0.02$). OW/OB, overweight/obese.

weight management perceptions and practices based on Likert rankings and then standardized to a *z*-distribution. Providers agreed that they feel comfortable (average Likert score [SD] of 4.05 [0.84]) and are willing (4.10 [0.83]) to discuss weight with their non-pregnant, reproductive-aged patients. Providers also agree that they feel comfortable (4.24 [0.56]) and are willing (4.18 [0.53]) to discuss physical activity recommendations during patient visits; however, they only somewhat agreed that they have time to do so (3.68 [0.93]). Providers reported that they often review the patient's BMI during office visits (average score of 4.35 [0.81] for new visits and 4.00 [0.97] for follow-up visits) and recommend that their patients who are overweight and/or have obesity lose weight (4.25 [0.64]); however, only sometimes do they inform the patient of her BMI status (3.65 [0.75]).

Diet and physical activity recommendations

Of the providers who make specific recommendations for physical activity ($n = 18$) and/or diet ($n = 13$), a majority ($n = 16$) indicated that they recommend moderate activity for 30–40 min, four to five times per week; however, none of the providers listed strength training as part of their recommendations. Provider recommendations for nutrition and diet as indicated in response to the open-ended question on the survey ($n = 10$) were inconsistent, with some providers recommending 'increased fruit and vegetables' or 'low carbohydrates' and others including lists of recommendations such as 'fruits, vegetables, lean meats, low- or no-fat dairy, whole grains, lean protein'. In the open-ended responses, none of the providers included the U.S. MyPlate or Dietary Guidelines for Americans (18) as part of their dietary recommendations, although utilization of these specific recommendations were not individually queried.

Weight loss prescription and referral recommendations

For preconception patients, providers often counsel patients who are overweight or obese that excess weight increases the risk of pregnancy complications (4.05 [0.95]) and delivery complications (4.00 [0.97]). Providers sometimes counsel patients regarding the effect of excess weight on fertility (3.95 [0.83]) but rarely counsel patients that maternal excess weight increases their child's risk of obesity (2.85 [1.31]). Providers indicated that they rarely counsel patients against conception because of elevated BMI (2.45 [1.23]) and almost never decline to provide fertility assistance because of a patient's BMI (1.88 [1.20]). Providers often ask about the patient's physical activity (4.15 [0.67]) but only sometimes inquire about dietary behaviours (3.70 [0.80]) or provide specific

recommendations for either physical activity (3.80 [0.59]) and/or diet (3.60 [0.82]). Providers rarely refer patients who are overweight or obese to other providers for assistance in weight management (2.90 [0.99]) or to the hospital-sponsored physical activity programme (2.42 [1.35]) and were significantly less likely to prescribe weight loss medications compared with other interventions. (1.45 [1.00], $Z = -2.13$ $p = 0.02$). See Figure 2.

Forty-eight per cent of the providers ($n = 11$) indicated that they do not prescribe weight loss medications; however, of those that do ($n = 10$), the most commonly prescribed medication to assist with weight loss was metformin (50% of providers that prescribe) followed by orlistat (20%), phentermine (20%), lorcaserin (20%), phentermine-topiramate (20%) and bupropion (10%). There were no statistically significant differences in the utilization of these medications likely because of low usage overall. None of the providers selected bupropion-naltrexone, benphetamine, diethylpropion or phendimetrazine as medications that they prescribe. Two providers indicated 'other' for their response to medications for weight loss; one of whom indicated that although they did respond as prescribing phentermine-topiramate, they no longer prescribe it because 'it became too burdensome' and the other provider indicated that although they do not prescribe metformin for weight loss specifically, when they do prescribe metformin for other reasons, counselling is provided regarding the possibility of weight loss.

Although providers indicated that they rarely refer their patients to other services for assistance with weight loss, when they do ($n = 20$, 1 provider indicated he or she never refers and 2 providers did not respond), a majority of providers refer to commercial weight loss programmes (65% of providers who refer) and to nutrition and/or registered dietician (60.9%), and close to half of the providers refer to an exercise physiologist or personal trainer, including FitRx (48%). However, less than a third of providers refer to bariatric surgery (26%), family practice (21.7%), community support groups (17.4%), psychology (8.7%) or endocrinology (4.3%) and 8.7% ($n = 2$) of the providers indicated that they did not know specifically who they could refer their patients to for assistance. These differences in referral utilization did not reach statistical significance.

Discussion

While the support for relaying appropriate weight management practices to patients is generally well regarded by the governing bodies of OB/GYN and OB/GYN providers themselves, the impact and variability of these conversations is less understood. This study contributes to the literature by exploring willingness, perceptions and behaviours of OB/GYN providers in a large, multi-clinic healthcare organization. Overall, providers make recommendations for physical activity and/or diet at least sometimes, but they rarely or almost never utilize other methods of weight management as outlined in the ACOG recommendations. This study also indicates that although providers share recommendations for physical activity behaviours, these recommendations were not completely aligned with national guidelines. Therefore, implementation strategies such as training, technical assistance and support may help streamline the way that providers are trained to have these conversations and the fidelity to best practices in weight management recommendations (19).

An implementation toolkit (e.g. a collection of implementation strategies) may be needed to help OB/GYN providers update patients on their BMI status. In the study reported here, providers often review the patient's BMI (for themselves), however, only sometimes inform the patient of her BMI status. Multiple studies have reported that patients identified as having obesity are more likely to attempt weight loss, however, similar to our findings, also demonstrate that only 66% of patients reported being informed of their weight status (20–24). Studies assessing barriers to BMI screening and discussion have cited lack of physician time and physician-perceived patient need, lack of usefulness of counselling, physician-perceived patient discomfort and lack of knowledge as commonly reported barriers (25,26). In this cohort of OB/GYN providers, there was not a perceived lack of patient need; however, providers only somewhat agreed that they had adequate time to provide counselling, further supporting time constraints as a significant barrier. Taken together, providers were comfortable and willing to have these conversations, agreed that patients were receptive to these conversations; however, a lack of time continues to be a barrier. There is a need for experiential opportunities to practice effective (and time efficient) ways to engage in weight management conversations. Notably, borrowing from the Exercise is Medicine literature, providers often perceive challenges in patient simulations as a form of practicing these conversations (e.g. if there is an actor, the provider is 'acting' too). Therefore, it may be necessary for providers to engage in weight management conversations with their patients and then receive support from a facilitator who can provide quality monitoring or engage in an audit process with feedback.

Providers in this study reported that they only sometimes provide physical activity recommendations. A study assessing patient recall of provider recommendations found that women who reported receiving encouragement from their provider for physical activity were

significantly more likely to report regular physical activity (OR 1.99, 95% CI: 1.35–2.95) (27). When counselling was performed, specific recommendations for physical activity were consistent among providers; however, these recommendations were not completely aligned with the Physical Activity Guidelines for Americans nor the updated, 2nd edition of these guidelines, which was released after this study was completed (28). Notably, the frequency and amount of physical activity recommended for adults remained the same across both editions. Although the guidelines recommend 150 min of moderate or 75 min of vigorous aerobic activity per week, which the majority of the providers in our study recommended, the recommendations also include 2 days of strength training, which was not mentioned by any of the providers in our study (17). In addition, the providers reported rarely referring patients to hospital-sponsored programmes for physical activity utilizing a physical trainer. While 50% of Americans are meeting the aerobic activity guidelines, only 13% meet the guidelines for strength training (29–32) which may be exacerbated by a lack of counselling by providers and lack of utilization of physical trainers and/or exercise physiologists (33). Most medical schools in the United States do not provide formal training – which is noted as a robust implementation strategy – on physical activity promotion, which underscores providers' potential lack of comfort with and uncertainty regarding their ability to discuss physical activity behaviours, counsel for physical activity or provide referrals (34–36).

Dietary recommendations were also inconsistent among the providers. The U.S. Department of Health and Human Services and the U.S. Department of Agriculture have published formal Dietary Guidelines for Americans (18) that can be used as resources for providing recommendations. A systematic review of over 26 randomized controlled trials also found that dietetic consultations for adults in a primary care setting appear to be effective for improving diet and weight loss (37). In this study, it was found that although providers reported only sometimes providing specific recommendations for diet, a large majority of providers indicated that they have referred patients to a nutritionist and/or dietician, however, indicated infrequent utilization of these referrals. Again, training and feedback about these guidelines and conversations is necessary to impact dietary behaviours that may ultimately lead to weight management.

Aside from diet and exercise, there are several other interventions shown to improve weight loss, especially when in conjunction with lifestyle changes. A 2012 systematic review of weight loss medications including over 24,000 individuals revealed that all weight loss medications assessed were effective at reducing weight compared with placebo and were cost-effective (38). However, similar to the findings in our study demonstrating weight loss medications non-use by almost half of providers, a survey of primary care providers found that 76% did not prescribe weight loss medications for long-term weight loss and that 58% had negative perceptions of pharmacotherapy, with safety concerns being the greatest barrier (39). The authors concluded that underutilization may be because of lack of knowledge about the medications. This is in alignment with previous data suggesting that although providers were more willing to prescribe weight loss medications if provided education and training, they were still significantly less willing to prescribe medications compared with all other interventions (40). Although a majority of healthcare providers in our study indicated utilizing referral services, the frequency of referral placement was scored as rarely or almost never despite the overwhelming evidence that bariatric surgery results in greater weight loss compared with all other interventions (41) and that a multidisciplinary approach to weight management is more effective (42–44). The findings of this study are consistent with other studies among non-OB/GYN providers demonstrating infrequent referrals (45,46). Physician-perceived lack of patient interest, patient refusal, increased operative fees, lack of confidence in bariatric surgery and lack of access to nearby bariatric centres have been cited as reasons for non-referral (45,46).

Taken together, providers are willing to engage in dietary, physical activity and weight management conversations with their patients and are already engaging in these behaviours to some extent. However, a number of system-level changes need to be implemented in order to improve the veracity of the knowledge that is shared and the confidence of providers in disseminating that information. One suggested approach is to engage in community–clinical partnerships to ensure that an intervention – whether it be referral, prescription, conversation or a weight management programme – fits the mission, values and resources of the providers who are asked to adopt the intervention (47,48). Providers may refer to existing community programmes that offer education and outreach: making health a community and clinical priority.

Lastly, when considering system-level changes, it is also important to acknowledge provider demographic variables and implicit biases when it comes to obesity. A large study of over 500 primary care physicians found that physicians with a normal BMI were more likely to engage in weight loss discussions with patients having obesity, had greater confidence in their ability to provide diet and exercise counselling and were more likely to believe that physicians should model healthy weight-related behaviours (49). Physicians were also more likely to record

a diagnosis of obesity (50) and initiate a weight loss conversation if the physicians' perception of the patients' body weight met or exceeded their own personal body weight (49). In the study presented here, 39% of providers had a normal BMI by self-reported height and weight; however, 30% did not supply the information necessary to calculate BMI; thus because of the low number of reported provider BMI data, it is unclear if provider BMI played a role in the reported practices. Querying these biases within each healthcare system, as well as educating providers that, although likely unintentional, practices differ based on provider BMI, can be useful to effect interventions that are well accepted and efficacious for each health system's specific provider and patient demographic.

Conclusions

Current practices of OB/GYN providers related to weight management could be improved through standardization of dietary and physical activity recommendations based on patient characteristics and baseline health, and improving patient-based conversations (e.g. informing patients of their BMI and how to successfully and healthfully reduce BMI). This preliminary study can be used to aid the development of methods for targeting current weight management deficiencies. Further studies are needed to identify patient and provider preferred methods for implementation of interventions aimed at improving utilization of available weight management options.

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Conflict of interest statement

The authors declared no conflict of interest.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix S1. Supporting information.