

Research Article

Intuitive Eating and Weight Restrictive Practices among Dietitians in Kuwait

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Abstract

Background: Dietitians are healthcare team members responsible for counseling patients with weight concerns. Both traditional/restrictive and intuitive eating/nonrestrictive practices are used with clients seeking weight loss. However, little is known about the weight management practices used with clients by dietitians in Kuwait, which are often related to the dietitians' knowledge, attitudes, and work experience. **Objectives:** The purpose of this study was to assess the knowledge and attitudes regarding intuitive eating among dietitians dealing with clients for weight management in Kuwait and describe their use of restrictive versus nonrestrictive dietary practices. **Method:** This was a cross-sectional descriptive study. A self-administered survey was distributed among dietitians working with clients for weight management in public and private clinics. **Results:** In total, 163 participants completed the survey. Most dietitians (81.6%) had not heard of intuitive eating as an independent approach to weight loss and scored low on knowledge of intuitive eating; however, many demonstrated positive attitudes towards intuitive eating (68%). Moreover, dietitians in Kuwait used both restrictive/traditional (69.31%) and nonrestrictive/intuitive eating (79.82%) weight management approaches to counsel clients. Total knowledge was positively correlated with use of nonrestrictive/intuitive eating ($r=.259$, $p=.003$) and traditional/restrictive practices ($r=.227$, $p=.009$). Years of experience was not related to either practice style. **Conclusions:** Dietitians are combining both restrictive and nonrestrictive approaches for weight management with clients, and their practices are related to knowledge. These findings underscore the importance of continuous education for dietitians working in all sectors in Kuwait.

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1. Introduction

Kuwait is among the top ten most obese countries in the world, with the obesity prevalence reaching 42.8% among adults [1]. Obesity induces all major metabolic disorders, especially diabetes, hypertension, dyslipidemia, and cardiovascular disease [2], and is related to osteoarthritis, gallbladder diseases, sleep apnea, respiratory problems, and some types of cancer [3]. Recent surveys showed that excessive dieting linked to eating disorders and other aberrant diet-related behaviors are common among Kuwaiti youth [4, 5]. Such diet trends appear to work against the development of healthy eating behaviors for maintaining a normal BMI. As overweight and obesity continue to increase, more patients are likely to seek advice for weight management.

Dietitians are regarded as the food and nutrition experts in the health field, and are involved in weight management.” [6]. Dietitians traditionally recommend restrictive diets and rigid eating patterns, such as high-protein or reduced-calorie meal plans, to overweight and obese patients and clients [7, 8]. However, research has demonstrated that the effectiveness of restrictive interventions, such as the low-fat diet or high protein, is limited [9–11], even with highly motivated individuals in the long term [12]. In some randomized controlled trials using restrictive dietary methods to manage weight in overweight men and women, a reduction in diet adherence and weight gain were noted after the first six months of dieting [11, 13]. Moreover, diets that include restrictions result in cravings; therefore, they may not be effective weight loss treatments [14]. Several investigations demonstrated that diets and restrained eating are associated with higher body mass index (BMI) and increased risk for disordered eating attitudes [4, 15]. The most recent guidelines on healthy eating recommend that dietitians use a “total-diet approach” in weight management practice with clients [16]. This approach discourages restriction and food and nutrient dichotomies and encourages including a variety of nutrient-dense foods in the diet, improving the overall diet quality, and achieving nutrient balance overtime [16].

Intuitive eating is an evidence-based weight management approach that encourages body-acceptance and promotes a healthy relationship with all foods as well as attitude changes that honor personal health and gentle nutrition [17, 18]. Intuitive eating encourages eating based on internal cues of hunger and fullness and emphasizes body size acceptance [19, 20]. Intuitive eating is associated with lower BMI and greater psychological well-being [21–24]. Studies show that intuitive eating may reduce the risk of disordered eating practices, increase measures of self-acceptance, and reduce the risk of weight gain and comorbid diseases associated with obesity [25–27]. The core principles of intuitive eating are unconditional permission to eat, trusting internal cues for hunger and fullness, and eating for physical and not emotional reasons [28]. Intuitive eating is not a diet, and individuals are coached to reject the diet mentality because it leads to weight gain or regain [17]. Studies showed that non-diet approaches improve eating behaviors and increase self-esteem and body satisfaction compared to diet programs [22, 29]. Non-diet approaches support long-term behavior changes and healthful eating and living habits [20, 22, 25].

In Kuwait, dietitians newly employed by the Ministry of Health (MOH) undergo a structured training program developed and conducted by experts at the Food and Nutrition Administration (FNA), focusing on nutrition in weight management, anemia, hypertension, cardiovascular disease, diabetes, and gastrointestinal disorders. This is followed by a 45-day training program supervised by dietitians, and it is their responsibility to define the standards of practice in the outpatient clinics in all the public hospitals. The private sector practices are not standardized, but overseen by private health companies or hospitals. At present, there are no national weight management practice guidelines developed for use by doctors, dietitians, or other health professionals in Kuwait; thus, the FNA, under the umbrella of the MOH, follows USA guidelines.

Few researchers have investigated dietitians’ attitudes regarding intuitive eating and their application of the intuitive eating approach in practice with clients [30, 31].

Although nonrestrictive diet approaches to weight loss are not a competency in the didactic program in dietetics or part of the dietetic training in Kuwait, it is crucial that dietitians are aware of the most up-to-date evidence-based approaches and strategies for the treatment of overweight and obesity. Therefore, this study aimed to assess the knowledge and attitudes regarding intuitive eating among dietitians dealing with clients for weight management in Kuwait and to describe their use of dietary restrictive versus nonrestrictive weight management practices. This information can provide baseline information to assist in the development and evaluation of weight management training programs and practice guidelines for dietitians in Kuwait.

2. Materials and Methods

2.1. Study design and participant recruitment

A cross-sectional study was conducted among dietitians working in the public and private sectors. We defined dietitians as healthcare professionals whose job entails assessing, diagnosing, and treating nutritional problems. In Kuwait, those who graduate with a Bachelor of Science (or higher) in “Human Nutrition or Dietetics” from Kuwait University or equivalent institutes may work as dietitians in the MOH or elsewhere counseling clients on weight management. Additionally, there are practicing dietitians with lower qualifications who earned their position through work experience in the MOH. Because there are no full lists of dietitians available in Kuwait, dietitians were recruited primarily by contacting dietetic supervisors or employer organizations and asking for the survey to be provided to all dietitians on staff. We specifically targeted dietitians dealing with weight management; however, many dietitians working with clients for weight management also have other roles as well, such as working in clinical care, research, community, and administration.

2.2. Procedures

Frequent random visits to weight management clinics in public and private hospitals and health centers in Kuwait were conducted for encouraging participant recruitment. Written informed consent was obtained from all participants. Data collection was conducted from November to December 2017. Ethical approval was obtained from the Standing Committee for Coordination of Health and Medical Research at the MOH. The instrument was validated in a small sample of dietitians, a random sample of 10% ($n=19$) of the total sample of dietitians was selected to validate the instrument. This sample was not included in the study sample.

2.3. Survey tool and measures

The survey tool was a self-administered questionnaire, developed by adapting some questions from a previous questionnaire by Schafer & Zullo [31] and adding some locally relevant questions. The questionnaire aimed to assess the following four aspects: 1)

knowledge of intuitive eating; 2) attitudes towards intuitive eating; 3) traditional and restrictive practices; and 4) nonrestrictive and intuitive eating practices [30]. The developed questionnaire was translated into Arabic and back-translated into English. The questionnaire content validity was confirmed by two experts in dietetics. The questionnaire was pretested for clarity, timing, and validity with a group of dietitians in the same age group and educational level ($n=19$), who were not included in the study sample. Both the English and Arabic versions were made available for participants' convenience. The final validated tool was used to assess dietitians intuitive eating knowledge and attitudes, and use of traditional/restrictive and nonrestrictive practices with clients who expressed weight concerns.

Knowledge of intuitive eating was measured with 14 true or false questions. Each question included a "Do not know" response category. Attitudes toward intuitive eating were measured with 7 items rated on a Likert scale (for the first item, 1=strongly do not support to 6=strongly support; for the remaining 6 items, 1=strongly disagree to 6=strongly agree). Each item also included a "Do not know" response category to distinguish those who were not familiar with intuitive eating from those who had a neutral opinion regarding intuitive eating. To measure practices, participants were asked how often they used each of 17 strategies to address clients' weight concerns (1=never to 5=usually); 7 items represented restrictive/traditional weight management practices, whereas 10 items represented nonrestrictive/intuitive eating strategies.

Frequencies were used to display dietitians' knowledge of and attitudes toward intuitive eating and use of restrictive/traditional and nonrestrictive/intuitive eating practices. Likert scale items are ordinal in nature; however, composite scores calculated from Likert scales can be treated as interval-level and parametric tests can be used to analyze such scores. Using this approach, total scores were calculated for each of the four factors. A total knowledge score was calculated by taking the number of questions answered correctly from the knowledge section of the survey (range=0–14). A total attitude score was calculated by taking the sum of the five items with the highest scores, reflecting more positive attitudes toward intuitive eating (range=5–25). Any attitude response reported as "Do not know" was treated as a nonresponse. A total score was calculated for both restrictive/traditional (range=7–35) and nonrestrictive/intuitive eating (range=10–50) practices. The scales for the knowledge, attitudes, and restrictive/traditional and nonrestrictive/intuitive eating practices demonstrated good to acceptable reliability in the current study (Cronbach's $\alpha >.70$).

2.4. Participant characteristics

Data were collected on gender, age, highest level of education completed, main practice setting, state of practice, whether they had completed a certificate of training in weight management, and whether they counseled overweight and/or obese clients for weight management. Mean age and frequencies for gender, highest educational level, practice setting, and certification in adult or pediatric weight management, and whether they counseled overweight and/or obese clients for weight management, were used to describe the sample.

2.5. Data analysis

Participants' characteristics, including demographics and responses to questionnaires, were analyzed using descriptive analysis. All variables were expressed as percentages of the study population. Categorical variables were compared using Pearson's chi-square (X^2). Fisher's exact tests were used when appropriate, i.e., whenever 20% of the expected cell frequencies were ≤ 5 . Parametric variables were analyzed using Student's t-tests for continuous variables. Results were expressed as means (M) \pm standard deviations (SD). All reported p-values were two-sided and were compared to a significance level of 5%; differences were considered statistically significant at $p < .05$. Analyses were performed using SPSSTM (version 24) for Windows (SPSS Inc., Chicago, IL, USA).

3. Results

3.1. Participants

Our study participants were dietitians or nutritionists working in Kuwait ($n=163$, response rate=81.5%). Most of the dietitians in our sample worked in the public sector (65%) and were female (81.6%). According to the Kuwaiti Civil Service Commission for 2017-2018, there are a total of 437 dietitians working in the public sector in Kuwait, including the MOH, Ministry of Defense, Ministry of Social Affairs, and Food and Nutrition Administration (Personal Communication, received on 22 March 2018). Those registered to be working under the jurisdiction of the MOH in the various hospitals and outpatient clinics in Kuwait comprised only 44.4% ($n=194$). Therefore, our sample from the public sector represented 64.6% of dietitians working in the MOH. Participants' work details and characteristics are summarized in Table 1.

More than half of the participants (63.2%) had earned at least a bachelor's degree, and 18.4% held a master's degree. The largest proportion of respondents reported working in a clinical setting (84.7%), and 49.7% reported working in weight management for more than 2 years, and on average they had been working in weight management for 8 years (mean 8.10 ± 3.62 years). Less than a third of the dietitians (22.7%) reported completing weight management training workshops offered by the MOH and/or international dietetic authorities (Table 2). Respondents who had completed one or more certificates of training in weight management or those with more years of experience in weight management counseling did not score differently in any of the measured factors compared to the other participants.

3.2. Knowledge and attitudes regarding intuitive eating and use of traditional/restrictive and nonrestrictive practices

The majority of participants (81.6%) had not heard of intuitive eating. Nonetheless, most of them (92%) completed the questionnaire section on knowledge of intuitive eating (Table 3). The mean knowledge score was low at 5.13 ± 2.28 (36.64%). According to the sample distribution, 28.7% of the dietitians scored ≥ 75 th% of the knowledge score (≥ 7

TABLE 1: Demographics, education, counseling practices, and place of employment of dietitian participants (N=163).

		Public sector 106 (65.0)	Private sector 57 (35.0)	Total 163 (100)
Frequencies, n (%)				
Gender	Male	15 (14.2)	15 (26.3)	30 (18.4)
	Female	91 (85.8)	42 (73.7)	133 (81.6)
Highest education	College diploma	24 (22.6) ^a	5 (8.8) ^b	29 (17.8)
	Bachelor's degree	64 (60.4)	39 (68.4)	103 (63.2)
	Master's degree	17 (16)	13 (22.8)	30 (18.4)
	Doctorate	1 (9)	–	1 (6)
Main practice setting	Clinical	89 (85.6)	49 (87.5)	138 (86.3)
	Community	4 (3.8)	2 (3.6)	6 (3.8)
	Research	6 (5.8)	–	6 (3.8)
	Private practice	2 (1.9)	4 (7.1)	6 (3.8)
	Other	5 (2.9)	1 (1.8)	6 (2.6)
Experience as weight management counselor	Less than 6 months	4 (4.7)	1 (1.9)	5 (3.6)
	2–12 months	19 (22.1) ^a	2 (3.8) ^{b*}	21 (15.1)
	>12 to <24 months	23 (26.7)	9 (17.0)	32 (23.0)
	≥2 years	40 (46.5) ^a	41 (77.4) ^{b*}	81 (58.3)
Place of employment	Selected places organized in descending order of proportion of participants*	Alamiri Hospital 35 (21.5)	Diet Care Center 19 (11.7)	
		Aladan Hospital 19 (11.7)	Dar Alshifa Hospital 4 (2.5)	
		Mubarak Hospital 15 (9.2)	New Mowasat Hospital 5 (3.1)	
		KOC Hospital 11 (6.7)	Diet Fix Center 2 (1.2)	
		Ibn Sina Hospital 9 (5.5)	Regime Center 1 (6)	
		Food and Nutrition Administration 2 (1.2)	Dasman Diabetes Institute 1 (6)	
Descriptive Statistics, Mean±Standard deviation				
BMI	kg/(m ²)	25.76±4.37 ^a	24.13±3.74 ^{b*}	24.04±4.69
Age	Years	29.57±5.05 ^a	32.11±6.67 ^{b*}	30.71±5.95
Years of work experience	Years	8.79±3.98	7.59±2.91	8.19±3.45
Knowledge score	maximum score 14	4.8±2.32	5.38±2.24	5.13±2.28
Restrictive practices score	maximum score 35	24.44±4.65	23.94±4.11	24.04±4.69
Nonrestrictive practices score	maximum score 50	39.38±7.19	40.81±5.54	39.63±6.76
Attitude score	maximum score 35	24.29±5.79 ^a	26.49±5.64 ^{b*}	24.79±5.87

*Proportions (%) or means in a row that do not share a superscript letter differ at p<.05

TABLE 2: Training and exposure to intuitive eating of participating dietitians (N=163).

Ad-hoc training opportunities in weight management		Public sector 106 (65.0)	Private sector 57 (35.0)	Total 163 (100)
Completed certificate of training in adult weight management	Yes	31 (29.2)	12 (21.1)	43 (26.4)
	No	75 (70.8)	45 (78.9)	120 (73.6)
Completed certificate of training in childhood and adolescent weight management	Yes	32 (30.2) ^a	6 (10.5) ^{b*}	38 (23.3)
	No	74 (69.8) ^a	51 (89.5) ^{b*}	125 (76.7)
Completed certificate of training in level II adult weight management	Yes	27 (25.5)	–	27 (16.6)
	No	79 (74.5) ^a	57 (100) ^{b*}	136 (83.4)
Completed more than one certificate of training in weight management	Yes	33 (31.1) ^a	8 (14.0) ^{b*}	42 (25.2)
	No	73 (68.9) ^a	49 (86.0) ^{b*}	122 (74.8)
Completed training to counsel clients with overweight and obesity	Yes	37 (34.9) ^a	10 (17.5) ^{b*}	47 (28.8)
	No	69 (65.1) ^a	47 (82.5) ^{b*}	116 (71.2)
Completed training to manage clients with overweight and obesity	Yes	24 (22.6)	13 (22.8)	37 (22.7)
	No	82 (77.4)	44 (77.2)	126 (77.3)
Completed MOH workshop: Obesity management in primary health care settings 5As	Yes	31 (29.5)	14 (24.6)	45 (27.8)
	No	74 (70.5)	43 (75.4)	117 (72.2)
Completed MOH workshop: Advances in childhood obesity	Yes	20 (19.0)	7 (12.3)	27 (16.7)
	No	85 (63.0)	50 (37.0)	135 (83.3)
Have heard of intuitive or mindful eating to manage clients with overweight and obesity	Yes	23 (21.7)	7 (12.3)	30 (18.4)
	No	83 (78.3)	50 (87.8)	133 (81.6)

*Proportions (%) or means in a row that do not share a superscript letter differ at $p < .05$

out of a total 14), with no significant differences found in the level of intuitive eating knowledge according to gender (% knowledge score=33.3% of males vs. 27.6% of females, $X^2 (1)=0.371$, $p=.554$) or work sector (% knowledge score=34.5% in private vs. 25.3% in public, $X^2 (1)=1.47$, $p=.226$). Many dietitians (between 3.7% and 27% depending on the question) reported not knowing the answer to knowledge questions. The questions that were most challenging were 13 and 14, which asked about the association of intuitive eating with psychological well-being and disordered eating.

All the dietitians ($n=163$) completed the attitudes section (Table 4), and the mean score of attitudes toward intuitive eating was 24.79 ± 5.87 (68%) showing a positive attitude toward intuitive eating (Table 4). The attitude score did not differ between genders, but differed significantly between work sectors, with more positive attitudes towards intuitive eating in the private sector compared to the public sector (26.49 ± 5.65 vs. 24.29 ± 5.79 , $p=.027$). Moreover, the private sector dietitians were significantly older (32.11 ± 6.67 vs.

TABLE 3: Dietitian responses to survey questions assessing knowledge of intuitive eating (N=163).

Knowledge of intuitive eating	True	False	Do not know
An intuitive eater tries to avoid certain foods high in fat, carbohydrates, or calories	64 (39.3)	93 (57.1)	6 (3.7)
An intuitive eater eats when feeling emotional (e.g., anxious, depressed, sad), even when not physically hungry	83 (50.9)	73 (44.8)	7 (4.3)
If craving a certain food, an intuitive eater allows his/herself to have it	48 (29.4)	105 (64.4)	10 (6.1)
An intuitive eater gets mad at him/herself for eating something not healthy	69 (42.3)	78 (47.9)	16 (9.8)
An intuitive eater is able to cope with negative emotions (e.g., anxiety or sadness) without turning to food for comfort	97 (59.5)	51 (31.1)	15 (9.2)
An intuitive eater allows him/herself to eat whatever food is desired at the moment	54 (33.1)	99 (60.7)	10 (6.1)
Most of the time, an intuitive eater desires to eat nutritious foods	64 (39.3)	85 (52.1)	14 (8.6)
An intuitive eater mostly eats foods that make his/her body perform efficiently (well)	54 (33.1)	94 (57.7)	15 (9.2)
An intuitive eater relies on his/her hunger signals to tell him/her when to eat	45 (27.6)	103 (63.2)	15 (9.2)
An intuitive eater relies on his/her fullness (satiety) signals to tell him/her when to stop eating	42 (25.8)	101 (62.0)	20 (12.3)
Research has shown that intuitive eating is positively associated with a normal BMI	48 (29.4)	86 (52.8)	29 (17.8)
Research has shown that weight loss is necessary for overweight and/or obese individuals to improve their health	20 (12.3)	123 (75.5)	20 (12.3)
Research has shown that intuitive eating is positively associated with psychological well-being (i.e., self-esteem, overall life satisfaction, and proactive coping skills)	36 (22.1)	93 (57.1)	34 (20.9)
Research has shown that intuitive eating is inversely associated with disordered eating, body dissatisfaction, and internalization of the thin ideal	31 (19.0)	88 (54.0)	44 (27.0)

Correct answers are presented in boldface type.

29.57±5.04, p=.029) and had lower BMI (24.13±3.74 vs. 25.77±4.87, p=.028). Almost a third of the dietitians “disagreed or strongly disagreed” with most attitude items. The use of intuitive eating was not supported by 43% of the dietitians to promote a healthy lifestyle. When compared to calorie-restrictive dieting style, 37.4% of the dietitians did not agree that intuitive eating is more effective. In contrast, the majority of the dietitians (72.4%) still thought that intuitive eating should be taught to dietetics students and 63.2% agreed and strongly agreed that dietitians should be trained to use intuitive eating for weight management.

Only dietitians who reported that they mainly counseled clients for weight management in out-patient clinics answered the questionnaire sections on practices (n=144, 88.3%) (Table 5). A total of 7 items in this section measured the use of

TABLE 4: Dietitian responses to survey questions assessing attitudes toward intuitive eating (n=163).

Support of and agreement with intuitive eating principles				
How strongly do you support the use of intuitive eating to promote a healthy lifestyle?				
Strongly do not support	Do not support	Neutral	Support	Strongly support
21 (12.9) §	50 (30.7)	11 (6.7)	51 (31.3)	30 (18.4)
Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7 (4.3)	50 (30.7)	1 (6)	64 (39.3)	41 (25.2)
It is important for individuals to choose foods that honor health and body function and also taste good				
6 (3.7)	35 (21.5)	1 (6)	66 (40.5)	55 (33.7)
Intuitive eating is an adaptive style of eating				
5 (3.1)	38 (23.3)	15 (9.2)	84 (51.5)	21 (12.9)
Intuitive eating is more effective than calorie-restricted dieting for long-term weight loss and/or maintenance				
10 (6.1)	51 (31.3)	13 (8.0)	63 (38.7)	26 (16)
Students aiming to become RDNs should be educated about intuitive eating				
2 (1.2)	38 (23.3)	5 (3.1)	80 (49.1)	38 (23.3)
Dietitians should be trained to use intuitive eating for weight management				
6 (3.7)	50 (30.7)	4 (2.5)	74 (45.4)	29 (17.8)

§ Item not included in total attitudes score.

traditional/restrictive practices and 10 items measured the use of nonrestrictive/intuitive eating practices. More than 50% of the dietitians reported that they often or usually used only 3 of the 7 traditional/restrictive practices. These 3 practices were as follows: giving specific advice to reduce total fat intake; advising clients to follow specific dieting plans that dictate what, when, and/or how much to eat; and encouraging clients to avoid foods high in fat, carbohydrate, or calories. On the other hand, in regard to the nonrestrictive/intuitive eating practices, more than 50% of dietitians reported that they often or usually used 9 out of 10 items. The nonrestrictive/intuitive eating practice that scored the lowest was recommending keeping a hunger awareness journal/diary. The mean total traditional/restrictive practices score was 24.26 ± 4.45 (69.31%, maximum score=35), whereas the mean total nonrestrictive/intuitive eating practices score was 39.91 ± 6.65 (79.82%, maximum score=50).

3.3. Correlations of factors

The total knowledge score was not correlated with the score on attitudes toward intuitive eating ($r=-.104$, $p=.234$); however, total knowledge score was positively correlated with scores of nonrestrictive/intuitive eating ($r=.259$, $p=.003$) and traditional/restrictive practices ($r=.227$, $p=.009$). Total attitudes score was not correlated with knowledge of intuitive eating, use of traditional/restrictive practices, or use of nonrestrictive/intuitive eating practices. Total traditional/restrictive practices score was positively correlated with dietitians' BMI ($r=.257$, $p=.002$).

TABLE 5: Frequency of use of restrictive/traditional and nonrestrictive/intuitive eating practices reported by dietitians dealing with weight management clients on a daily basis (n=144).

Traditional/restrictive practices that dietitians recommend or advice:		Never	Rarely	Sometimes	Often	Usually
1	Eating fewer calories	3 (2.1)	17 (11.8)	57 (39.6)	47 (32.6)	20 (13.9)
2	Reducing total fat intake?	1 (.7)	16 (11.1)	47 (29.2)	56 (38.9)	29 (20.1)
3	Following specific dieting plans that dictate what, when, and/or how much to eat	3 (2.1)	17 (11.8)	37 (25.7)	52 (36.1)	35 (24.3)
4	Avoiding foods high in fat, carbohydrates, or calories	2 (1.4)	10 (6.9)	45 (31.3)	54 (37.5)	33 (22.9)
5	Using a food journal/diary to monitor exact calories or portions	5 (3.5)	28 (19.4)	44 (30.6)	45 (31.3)	22 (15.3)
6	Keeping a weight journal/diary	11 (7.6)	21 (14.6)	50 (34.7)	40 (27.8)	22 (15.3)
7	Weighing oneself	23 (14.1)	26 (16.0)	51 (31.3)	38 (23.3)	25 (15.3)
Nonrestrictive/intuitive eating practices that dietitians engage in:		Never	Rarely	Sometimes	Often	Usually
1	Giving advice on opportunities for increasing incidental physical activity	4 (2.8)	7 (4.9)	22 (15.3)	52 (36.1)	59 (41.0)
2	Helping clients find enjoyable ways to be physically active, rather than following a strict exercise regimen	3 (2.1)	7 (4.9)	19 (13.2)	35 (24.3)	80 (55.6)
3	Giving advice on meals and snacks distribution throughout the day	1 (.7)	4 (2.8)	17 (11.8)	43 (29.9)	79 (54.9)
4	Giving practical tailored advice on shopping and cooking	3 (2.1)	3 (2.1)	42 (29.2)	42 (29.2)	54 (37.5)
5	Helping clients identify and eat enjoyable and nutritious foods	3 (2.1)	2 (1.4)	26 (18.1)	41 (28.5)	72 (50.0)
6	Working with clients using behavior modification techniques	3 (2.1)	6 (4.2)	33 (22.9)	41 (28.5)	61 (42.4)
7	Helping clients learn to recognize and eat based on internal signals of hunger, fullness, and satiety	4 (2.8)	9 (6.3)	40 (27.8)	42 (29.2)	49 (34.0)
8	Recommending keeping a hunger awareness journal/diary	29 (20.1)	24 (16.7)	34 (23.6)	30 (20.8)	27 (18.8)
9	Working with clients to increase self-esteem	5 (3.5)	10 (6.9)	34 (23.6)	40 (27.8)	55 (38.2)
10	Working with clients to increase self-acceptance of weight	4 (2.8)	5 (3.5)	42 (29.2)	39 (27.1)	54 (37.5)

4. Discussion/Conclusion

This research is the first to assess weight management practices among dietitians in Kuwait. Findings indicated that many dietitians are already incorporating many of the nonrestrictive strategies within their practice for weight management clients. However, traditional restrictive practices are still the standard approach to weight management, where dietitians' standardized protocols often emphasize the restriction of calories, total fat, and carbohydrates, and clients are advised to follow restrictive eating plans.

Most of the dietitians (81.6%) reported that they had not heard of intuitive eating, and their knowledge of intuitive eating was found to be low. Dietitians from both the public and private sectors equally demonstrated low knowledge of the intuitive eating construct and lack of knowledge of key concepts. The dietitians' responses on intuitive eating knowledge items showed more conviction towards restrictive strategies. More than 60% of the dietitians incorrectly answered the questions on key concepts of intuitive eating (i.e., answered that an intuitive eater does not allow him/herself to eat whatever food is desired or craved at the time, and does not rely on satiety signals to stop eating).

A large number of dietitians reported "Do not know" for the item "Research has shown that intuitive eating is positively associated with psychological well-being (i.e., self-esteem, overall life satisfaction, and proactive coping skills)," and for the item "Research has shown that intuitive eating is inversely associated with disordered eating, body dissatisfaction, and internalization of the thin ideal." Dietitians lack of knowledge regarding these questions could reflect the lack of education and training in weight management and counseling strategies. Interestingly, we observed that the use of traditional/restrictive approaches was positively correlated with dietitians BMI. Our study did not assess whether dietitians applied these restrictive approaches on themselves, and this finding may simply be an indicator that those dietitians applying restrictive approaches may benefit from training on intuitive eating for themselves and their clients as another weight management method.

Intuitive eating knowledge among dietitians was positively related to the use of both nonrestrictive/intuitive eating and traditional/restrictive practices. This finding indicates that with increased intuitive eating knowledge more than 50% of dietitians continued to practice a combination of restrictive and nonrestrictive approaches for client weight loss. Our findings may be indicative of the dietitians' flexibility in tailoring the counseling strategies to their clients by personalizing the counseling sessions according to clients' needs. Thus, weight management styles such as nonrestrictive/intuitive and traditional/restrictive eating become difficult for dietitians to isolate and may often overlap during a nutrition session.

The use of restrictive food practices in weight loss programs has commonly been considered the customary dietetic treatment for weight loss [32, 33]; however, many dietitians worldwide are beginning to emphasize health rather than restriction or deprivation and are shifting towards behavioral therapy as part of the counseling sessions with a size-acceptance approach [34–36]. Nevertheless, the 2016 guidelines of the Nutrition and Dietetics, the leading nutrition authority in the USA, still remain focused on energy balance and low-energy meals to attain weight loss [7], which is in line with traditional/restrictive practices, and are yet to recognize the intuitive eating model as an independent weight loss strategy. This may be partially explained by the fact that intuitive eating has been mainly investigated in university students with disordered eating and body image concerns; thus, findings cannot be generalized to the wider population [19].

It is noteworthy in this study that the length of experience in nutrition counseling was not associated with intuitive eating knowledge. This may be because senior dietitians may not have the most current knowledge of weight management, as it pertains to

the intuitive eating approach. Findings could also be partially explained by continuing education courses and workshops not being mandatory because of vague or non-existent license and certification criteria in Kuwait. Differences may also not be seen between novice and experienced dietitians because both are still unfamiliar with this newer weight loss approach, particularly when following leading nutrition authorities that do not include intuitive eating as part of patient therapy [7, 37, 38].

We found that the attitudes toward intuitive eating were generally more positive among the dietitians working in the private sector compared to those in the public sector. This may be because of the work environment in the private sector could include more diverse types of clientele, more freedom in styles of counseling, and more time allowed per client than in the public sector. On the other hand, we found that neither knowledge or practices of intuitive eating were related to attitudes toward intuitive eating. It is likely that dietitians are implementing some nonrestrictive methods but because they are not familiar with the defined intuitive eating approach there was no association observed. This may also be further explained by the lack of training and education on intuitive eating in Kuwait. However, we found that most dietitians agreed or strongly agreed that students studying to become dietitians should be educated about intuitive eating and that dietitians should be trained to use intuitive eating for weight management, which indicates an eagerness and willingness to learn different weight loss strategies.

Our study shows that few dietitians used a non-diet, size-acceptance approach with all of their clients, and the majority agreed that they assessed a patient's circumstances before determining the appropriate approach. Thus, the frequency of using specific strategies may be client-dependent and difficult to generalize. Although interventions that apply an approach consistent with intuitive eating have shown that physical and psychological health can improve, with a decrease in BMI in some instances (20, 25), there is still a shortage of research on the long-term outcomes of adherence to this lifestyle. In fact, research in the dietetics field continues to be largely based on the restrictive approach for weight loss. Health outcomes of weight management approaches have also not been assessed for all lifestyle-related chronic conditions such as osteoarthritis or cancer. These factors may also weigh on dietitians as they pursue the best counseling approach for their clients.

A strength of this study is that dietitians were recruited from public and private sectors, with a relatively large sample size of dietitians working in the MOH (64.6%). Further, this is the first study to describe weight management practices by dietitians in Kuwait. We cannot rule out selection bias, as only those dietitians willing to participate were included in this study. Moreover, the respondents may not be representative of all dietitians at the recruitment locations; therefore, the results may not reflect the knowledge, attitudes, and practices of all dietitians.

To sum up, this study provides evidence that most dietitians are not knowledgeable about intuitive eating; however, they have positive attitudes toward this approach, and they unknowingly use strategies and practices consistent with intuitive eating frequently. Further, dietitians in Kuwait from both work sectors use a variety of non-diet and diet-focused methods with clients, suggesting that they are most comfortable adopting the two opposing paradigms. Future research should explore this multifaceted approach

to weight management counseling and its outcomes in terms of patients' success in weight loss and maintenance. More research and education on intuitive eating should be encouraged to determine its acceptability and best application in the Kuwaiti private and public sectors. Finally, further research should be conducted on the health outcomes of intuitive eating, comparison with the weight-loss and weight-centered approaches, and whether there are subpopulations of individuals who may benefit the most from intuitive eating.

5. Statements

5.1. Acknowledgments

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5.2. Statement of ethics

Subjects provided their written informed consent. The study protocol has been approved by the Ministry of Health committee on human research, the research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. All participants were identified by numbers, and not by their real names.

5.3. Disclosure statement

The authors have nothing to disclose.

5.4. Funding sources

No external funding was received for any component of this work.

5.5. Author contributions

DA and LS conceived and designed the study. AS coordinated data collection and entry. DA and LS performed the statistical analysis and wrote the manuscript. MH revised on the statistical analysis and commented on drafts of the manuscript. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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