

## ORIGINAL ARTICLE



# The nutritional knowledge and the perception of weight-loss strategies for obese patients among emergency medicine doctors in Hong Kong

Kwun Bun Wong<sup>1</sup> | Kwong Hang Yeung<sup>1</sup> | Shi Ying Christine Li<sup>2</sup> | Kevin Kei Ching Hung<sup>1,3</sup>

<sup>1</sup>Emergency Medicine Research Unit, Accident & Emergency Department, Prince of Wales Hospital, Hong Kong SAR, China

<sup>2</sup>Department of Food Science and Nutrition, The Hong Kong Polytechnic University, Hong Kong SAR, China

<sup>3</sup>Accident & Emergency Medicine Academic Unit, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

## Correspondence

Kevin Kei Ching Hung, Accident & Emergency Medicine Academic Unit, Chinese University of Hong Kong, 2/F, Main Clinical Block and Trauma Centre, Prince of Wales Hospital, Shatin, New Territories, Hong Kong SAR, China.  
Email: [kevin.hung@cuhk.edu.hk](mailto:kevin.hung@cuhk.edu.hk)

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## Abstract

**Introduction:** Obesity is commonly seen in patients attending the emergency department (ED). Opportunities to provide nutritional advice to patients with obesity are often overlooked in ED settings. Numerous barriers and perceptions exist among healthcare professionals. This study aimed to explore the ED physicians' attitudes, practices, nutritional knowledge and barriers towards nutrition advice in weight management for obese patients in the ED.

**Methods:** This was a cross-sectional survey conducted from February to April 2024. The self-designed questionnaire consisted of questions regarding respondents' characteristics, attitudes, practices and barriers towards providing nutrition advice for obese patients in the ED and assessing the knowledge of nutrition among ED doctors. Non-parametric tests and Pearson correlation were performed for statistical analysis. The responses between doctors with normal body mass index (BMI) and extreme BMI groups ("BMI < 18.5" and "BMI > 25.0") were compared.

**Results:** This study included 120 responses with a response rate of 16.9%. The mean nutritional knowledge score for doctors with normal BMI was  $54.4 \pm 14.5$ , and it was significantly higher than that of doctors who self-reported as underweight ( $46.3 \pm 5.6$  and  $p = 0.049$ ) or overweight ( $48.9 \pm 16.1$  and  $p = 0.029$ ). The top barrier to nutrition support for obese patients in ED settings was "too busy to give nutrition advice" (77.5%).

**Conclusions:** Our study highlighted the common barriers to offering nutritional advice and insufficient nutrition training among ED physicians. Integrating comprehensive nutrition education into our undergraduate medical training and providing regular evidence-based nutritional courses may improve patients' and physicians' health.

## KEYWORDS

ED physician, nutrition belief, nutritional knowledge, obesity, weight loss

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## 1 | INTRODUCTION

The prevalence of obesity is growing worldwide, with currently estimated one in eight people in the world by the World Health Organization.<sup>1</sup> In Hong Kong, 32.6% of persons aged 15–84 were obese and 22.0% were overweight.<sup>2</sup> The prevalence of metabolic syndrome in Hong Kong was estimated to be around 6.1%–13.4%.<sup>3</sup> Obesity is associated with an increased risk of chronic diseases and metabolic diseases such as type 2 diabetes, hypertension, coronary heart disease, stroke and cancer.<sup>4</sup> The cost of managing obesity and its complications was estimated to be 8.2%–9.8% of the total public expenditure on health in Hong Kong.<sup>5</sup>

The American Association of Clinical Endocrinologists/American College of Endocrinology clinical practice guidelines for medical care of patients with obesity demonstrated that there was an association between obesity and various acute and chronic emergency department (ED) presentations including diabetic ketoacidosis, hypertensive urgency and cardiovascular complications in the United States.<sup>6</sup> On the other hand, resuscitation of a crashing obese patient presents numerous challenges for physicians. Many studies found that obese people are at a higher risk of suffering from acute respiratory failure and increased complexity in their airway management.<sup>7</sup> During the COVID-19 pandemic, obesity was the second most common associated factor for hospitalisation.<sup>8</sup> The trauma and injury pattern in obese people is different from lean people, with limb, pelvis and thorax injuries being more prevalent.<sup>9</sup>

Besides the above presentation, obesity is a risk factor for procedural challenges such as having a difficult airway, having increased difficulty in getting intravenous access and suffering more commonly from complications of injury and trauma.<sup>10</sup> Obesity was linked to an increased likelihood of being hospitalised after ED visits, higher rates of non-home discharges, elevated overall hospital expenses and a greater volume of medical procedures.<sup>11</sup> Privacy and psychological well-being are also important factors when providing emergency care.<sup>12</sup>

Even though emergency physicians may be knowledgeable about the immediate risks associated with obesity, we may be paying less focus on understanding the underlying causes or factors contributing to a patient's obesity. As frontline doctors, we believe that ED doctors have a role in primary health promotion and obesity prevention. Emergency medicine (EM) based on intervention against obesity effectively improved the patient's lifestyle modification.<sup>13</sup> Emergency doctors and nurses may be expected to give accurate and professional advice in managing the patient in the hospital. A brief dietary counselling intervention applied in an ED setting has been shown to improve patient behaviour.<sup>14</sup> However, a systematic review published in 2019 found numerous studies showing inadequate

nutritional knowledge among healthcare providers and medical students.<sup>15</sup> Furthermore, barriers exist and there was a poor perception among ED healthcare professionals in giving nutritional advice.<sup>16</sup>

The objectives of the study were to explore the knowledge and perception of weight-loss strategies and beliefs and to identify the knowledge gap barrier to giving nutritional advice among emergency physicians in Hong Kong.

## 2 | METHODS

### 2.1 | Study design

This cross-sectional survey targeted all EM trainees and fellows in Hong Kong. It was conducted from February to April 2024. The study was approved by the Joint Chinese University of Hong Kong—New Territories East Cluster Clinical Research Ethics Committee (CREC no: 2023.694). This study was carried out in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines. Consent to participate was obtained at the beginning of the electronic survey. A web-based electronic survey application (Google form) with a QR code was distributed to ED physicians through emails, WhatsApp and social media platforms during the Hong Kong College of EM training events and by personal invitations. EM doctors were encouraged to share the invitation with eligible participants.

### 2.2 | Study measure

The self-designed questionnaire consisted of three parts:

Section A included basic demographic information such as age, gender, current body mass index (BMI), recent weight change, working place and years of clinical practice.

Section B involved exploring attitudes, practices and barriers to nutrition advice in weight management for obese patients in the ED.

Section C assessed respondents' knowledge of nutrition. There were 16 multiple-choice questions (MCQs), each with four possible answers, of which only one was correct. The MCQs were adapted to assess theoretical knowledge and modified from those published by Temple.<sup>17</sup> Each correct answer would score one point and there would be no marks for an incorrect answer.

#### 2.2.1 | Outcome and definition

The perception of weight-loss strategies included a low-carbohydrate calorie-restricted diet, a low-fat calorie-

restricted diet, intermittent fasting, a ketogenic diet and other diets such as the Mediterranean diet, Paleo diet, vegan diet and diabetes prevention programme.

Intermittent fasting is a meal timing schedule that cycles between voluntary fasting (or/and reduced calorie intake) and eating over a given period.

The ketogenic diet is a high-fat, adequate-protein and low-carbohydrate dietary pattern.

The Mediterranean diet is a traditional diet in Mediterranean countries. It is characterised primarily by a high consumption of vegetables, olive oil and moderate protein consumption.

The paleo diet is the modern interpretation of the diet humans ate during the “Old Stone Age.”

A vegan diet is based on plants (such as vegetables, grains, nuts and fruits) and foods made from plants.

The diabetes prevention programme is an evidence-based programme for people who have prediabetes and are overweight or obese by the University of Pittsburgh Medical Centre.<sup>18</sup>

## 2.3 | Statistical analysis

Descriptive statistics were used to describe the respondent demographics, clinical variables and nutritional knowledge. Data were presented as frequencies, percentages, means and standard deviation for various parameters. The Mann–Whitney *U* test, Kruskal–Wallis *H* test and chi-squared test were used for the group comparison based on appropriateness. Pearson's test was also used to determine the correlation between variables. A *p*-value of less than 0.05 was considered statistically significant. All statistical analyses were done using SPSS version 29.0 for Windows (IBM SPSS Statistics, Armonk, NY, USA).

## 3 | RESULT

A total of 120 (16.9%) responses from 708 ED trainees and fellows were received from ED physicians. Table 1 provides an overview of the demographic characteristics of respondents. The physician's age was between 25 and 63. Most respondents were male, aged between 25 and 45, working in the Hospital Authority (public hospitals).

### 3.1 | Nutritional knowledge score of respondents

The bivariate associations between the overall nutrition knowledge score and sociodemographic variables are presented in Table 1. No significant differences were found in the mean nutritional knowledge scores

between genders, ages, years of clinical practice, working place and recent weight changes (Table 1). The mean score (average percentage of correct answers) about nutritional knowledge among EM physicians was  $53.0 \pm 14.9$  (out of 100) (Table 2). The mean score with extreme “BMI<18.5” was  $46.3 \pm 5.6$  ( $p < 0.049$ ) and “BMI>25.0” was  $48.9 \pm 16.1$  ( $p < 0.029$ ). These scores were statistically lower than the doctors with the “normal BMI” group of  $54.4 \pm 14.5$ .

### 3.2 | Practice and barrier of giving nutritional knowledge in ED

In Figure 1, the top sources of physician nutrition-support training were the Internet and apps (43.6%), followed by textbooks (17.0%) and other professionals such as dietitians (14.7%). The top barrier to nutrition support in the ED was “too busy to give nutrition advice” (indicated by 77.5% of respondents).

### 3.3 | ED physicians' attitudes towards weight-loss strategies and nutrition

Sixty eight out of 120 respondents reported their own weight-loss strategies and the strategies they recommended to obese ED patients (Table 3). More ED physicians recommended their patients to use low carbohydrate (64.7% vs. 78.6% and  $p = 0.072$ ) and low-fat calorie restriction (32.4% vs. 68.6% and  $p < 0.001$ ) weight reduction strategies than were used by themselves. Although more ED physicians tended to use a low-carbohydrate calorie-restricted diet and intermittent fasting, it was found that intermittent fasting (60.3% vs. 10.0%,  $p < 0.001$ ) and ketogenic diet (16.2% vs. 4.3%  $p = 0.021$ ) were less likely to be recommended to patients.

Regarding the attitudes towards nutrition advice in the ED setting, “nutrition counselling in the EM practice setting will be beneficial for the patients” and “patients want more information on nutrition than I am able to provide” were more commonly agreed by respondents (Figure 2). The statement “obese patients could get an adequate and accurate nutritional information” was agreed by less than 20% of respondents. “ED physician's self-reported competency in giving dietary advice to obese patients” was 2.65 out of 5.

EM physician thought that the dietitian ( $4.63 \pm 0.64$ ) was the most suitable person to provide nutritional assessment and counselling compared with EM nurses ( $2.92 \pm 0.98$ ,  $p < 0.001$ ) and EM doctors ( $3.08 \pm 0.94$  and  $p < 0.001$ ) (Figure 3a). Respondents rated diet ( $3.83 \pm 0.89$  and  $p < 0.001$ ) and exercise ( $3.73 \pm 0.88$  and  $p < 0.001$ ) as more important than pharmacological treatment ( $3.25 \pm 0.96$ ) in managing obesity (Figure 3b).

**TABLE 1** Respondent characteristics and the nutritional knowledge score.

Demographic characteristics, <i>n</i> = 120	Number (%)	Mean score $\pm$ SD	<i>p</i> -value
Gender			0.954
Male	90 (75.0)	53.4 $\pm$ 15.1	
Female	30 (25.0)	51.7 $\pm$ 14.6	
Age group			0.999
25–35 years	44 (36.7)	52.4 $\pm$ 14.6	
36–45 years	49 (40.8)	53.6 $\pm$ 14.8	
46–55 years	19 (15.8)	53.6 $\pm$ 16.3	
>55 years	8 (6.7)	51.6 $\pm$ 17.0	
Years of clinical practice			0.673
<5 years	18 (15.0)	52.1 $\pm$ 12.1	
5.0–9.9 years	27 (22.5)	53.5 $\pm$ 16.5	
10–14.9 years	25 (20.8)	56.8 $\pm$ 16.7	
15.0–19.9 years	21 (17.5)	51.2 $\pm$ 9.2	
$\geq 20.0$ years	29 (24.2)	51.1 $\pm$ 16.9	
Working place			0.720
Public hospital	104 (86.7)	52.6 $\pm$ 14.1	
Private hospital	16 (13.3)	55.1 $\pm$ 19.7	
Current BMI			0.083
<18.5 kg/m <sup>2</sup>	5 (4.2)	46.3 $\pm$ 5.6 <sup>a</sup>	
18.5–23.0 kg/m <sup>2</sup>	50 (41.7)	54.4 $\pm$ 14.5	
23.1–25.0 kg/m <sup>2</sup>	37 (30.8)	55.1 $\pm$ 15.1	
$\geq 25.1$ kg/m <sup>2</sup>	28 (23.3)	48.9 $\pm$ 16.1 <sup>b</sup>	
Weight changes in recent 1 year			0.241
Gain weight >15%	0 (0.0)	0.0 $\pm$ 0.0	
Gain weight 5%–15%	21 (17.5)	57.4 $\pm$ 13.7	
Remain similar –5%–5%	95 (79.2)	51.8 $\pm$ 15.1	
Loss weight 5%–15%	4 (3.3)	56.3 $\pm$ 13.5	
Loss weight >15%	0 (0.0)	0.0 $\pm$ 0.0	

<sup>a</sup>The Mann–Whitney *U* test was used to compare with the group of “BMI within 18.5–23.0” (*p* = 0.049).

<sup>b</sup>The Mann–Whitney *U* test was used to compare with the group of “BMI within 18.5–23.0” (*p* = 0.029).

## 4 | DISCUSSION

### 4.1 | Nutritional knowledge among EM physician

To our knowledge, this is the first cross-sectional quantitative survey for assessing nutritional knowledge among physicians in Hong Kong. The average nutritional knowledge score among ED physicians was  $53.0 \pm 14.9$ , comparable with other physicians worldwide, from 33.0% to 72.0%.<sup>19</sup> Systematic reviews revealed that older physicians, qualified as specialists, held an advanced degree and/or had more years of clinical practice and had higher nutrition knowledge

scores. However, in our study, age, gender, years of clinical practice and working environment are not associated with nutritional knowledge scores.

Interestingly, physicians with normal BMI nutritional knowledge scored higher than physicians' score with extreme “BMI < 18.5” or “BMI > 25.0”. Physicians with normal BMI were confident in their ability to provide diet and exercise counselling and were more likely to engage them in weight-loss discussions.<sup>20</sup> ED physicians work in shifts and have busy working environments. They are prone to stress and may neglect their own well-being. Lenders et al. found that physicians who practice health habits are the most significant predictors of optimal prevention-related

**TABLE 2** Nutritional knowledge among emergency medicine physicians.

Question	Answer	Correct percentage (%)
1. A nutrient believed to help prevent thrombosis is:	Omega 3	69.1
2. Excess of which nutrient may increase body calcium loss:	Protein	13.3
3. What type of dietary fibre is helpful in lowering the blood cholesterol level:	Soluble fibre	62.5
4. The average daily salt intake of Hong Kong people is:	6–9 g	33.3
5. The major type of fat in olive oil is:	Monounsaturated fat	36.7
6. Compared with unprocessed vegetable oil, hydrogenated fats contain:	More trans fat	60.0
7. Which nutrient is protective against hypertension:	Potassium	60.0
8. If a person habitually consumes 10 tablets a day of vitamin-mineral supplements, which nutrient is least likely to cause toxicity:	Vitamin E	43.3
9. The most concentrated source of vitamin B12 is:	Meat	53.3
10. Which substance raises the blood HDL-cholesterol level:	Alcohol	9.2
11. Nutrition recommendations for Hong Kong recommends that the diet should contain the following percentage of energy as fat:	<30	42.5
12. A type of food believed to have a preventive effect on various types of cancer is:	Fruit and vegetables	85.0
13. The number of kilocalories in 1 g of fat is:	9	44.1
14. Which of the following is not an antioxidant nutrient:	Zinc	48.3
15. A common nutrient deficiency in alcoholics is:	Thiamine	95.0
16. The nutrient strongly associated with the prevention of neural tube defects is:	Folate	95.0

counselling.<sup>21</sup> 54.1% of doctors are overweight and obese in our study, which matches the general population distribution.<sup>2</sup> To benefit patient and physician's health, there is an urgent need to improve the education of physicians about nutrition and physical activity.

## 4.2 | Barriers to giving nutritional advice in ED

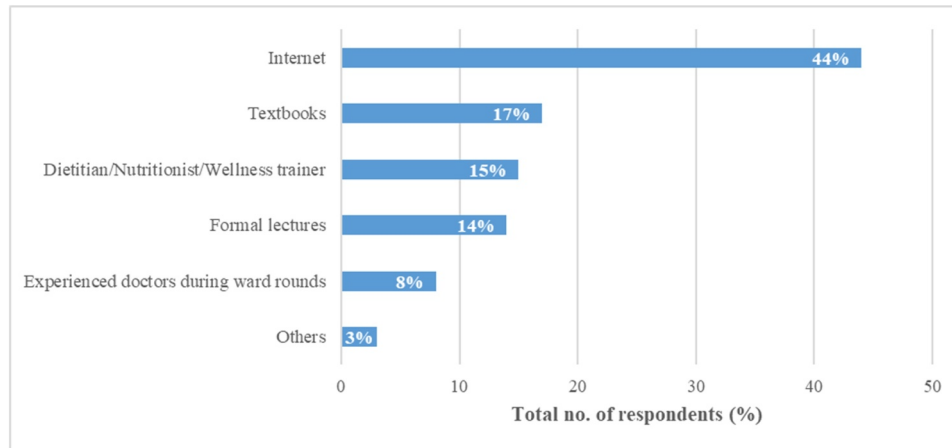
Nutrition support is sometimes overlooked in the ED when the focus is on caring for critically ill patients. However, many people without acute emergency problems utilise the ED as a place for their primary health care. ED doctors may be facing the challenges of giving nutritional advice on obesity and its related diseases, such as diabetes and hypertension, in our daily practice. ED doctors understand nutrition is critical to reducing obesity, diabetes complications and cardiovascular disease. However, providing comprehensive care services in an ED is difficult. In our study, a busy environment, lack of knowledge and lack of standard protocol are the main barriers to providing nutritional support to patients. The main barrier, the “busy environment”, is also observed in ED settings in China<sup>16</sup> suggested that ED doctors often face time constraints and must prioritise immediate life-saving interventions over more comprehensive nutritional

assessments and interventions. The second barrier to nutritional support was “lack of knowledge”, also reported among physicians in the US, Europe, Malaysia and Taiwan. Multiple systematic reviews revealed that medical physicians and students' lack the knowledge and skills to deliver nutrition advice in routine clinical practice.<sup>15</sup>

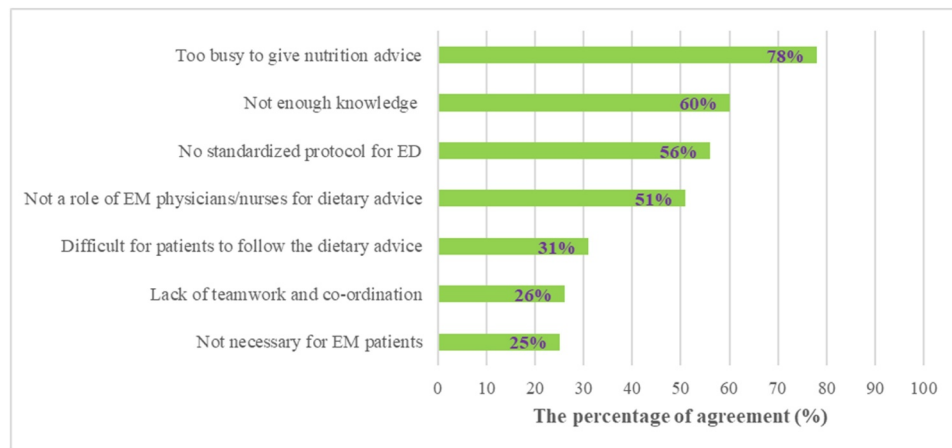
Nutrition is a complex and evolving field and many physicians have not received extensive training in this area.<sup>22</sup> Medical schools and teaching focus on diagnosis and treatment rather than preventive or lifestyle medicine such as nutrition; there is an urgent need for the reform of education to address the health challenges of our global society.<sup>23</sup> Continuing education programs, workshops and online resources will help clinicians develop knowledge and skills in nutrition.<sup>24</sup> The third barrier was the lack of “standard protocol” in ED. In Hong Kong ED, we get used to many protocol and guideline-driven practices such as Advanced Cardiovascular Life Support and Advanced Trauma Life Support to ensure safe and efficient practice. A protocol-driven ED offers effective decisions, life savings, shorter stays and reduced admissions.<sup>25</sup> A brief dietary counselling intervention in an ED setting has been shown to improve patient behaviour<sup>14</sup> and impact health and well-being. Establishing a protocol in the EM context to guide optimal nutrition support in a fast-paced working environment may be more practical and feasible in the future.<sup>16</sup>



A



B



**FIGURE 1** (a) The source of nutrition-support training for emergency department (ED) physicians and (b) the percentage of agreement for the main barrier to nutrition support in ED setting ( $n = 218$ ).

**TABLE 3** Percentage of emergency department physicians reporting the weight-loss strategies for self and the recommended strategies for their patients.

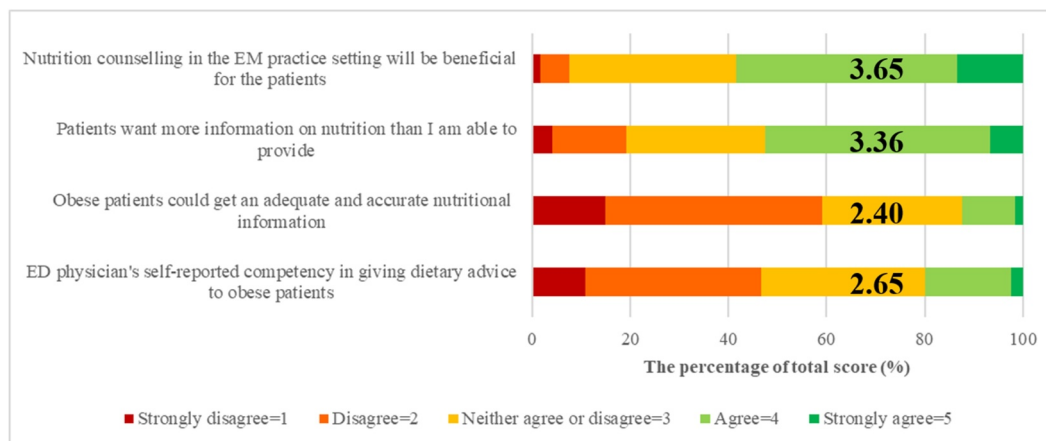
	For self ( $N = 68$ )	For patient ( $N = 70$ )	<i>p</i> -value
Low carbohydrate calorie restriction diet	64.7%	78.6%	0.072
Low fat calorie restriction diet	32.4%	68.6%	<0.001
Intermittent fasting	60.3%	10.0%	<0.001
Ketogenic diet	16.2%	4.3%	0.021
Other diets	10.3%	18.6%	0.169

### 4.3 | Weight-loss strategy belief

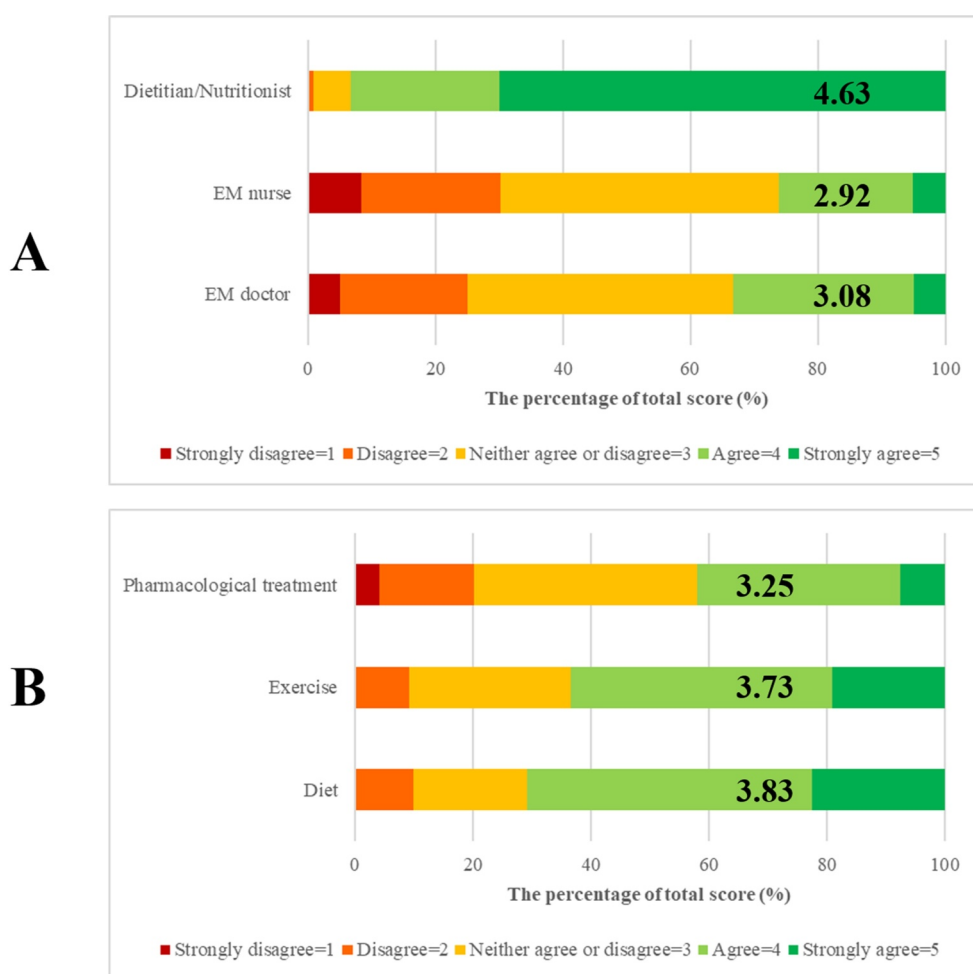
A report by the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Obesity Society revealed that different dietary patterns and compositions would lead to successful weight loss. Still, the most important factor for success was dietary adherence.<sup>26</sup> Physicians can recommend diets according to patient preference and lifestyle to improve adherence to achieve weight loss. Our study explored the difference between physicians

using weight-loss strategies for themselves and recommending them to their patients. There was a discrepancy between the doctor's own' beliefs and recommendations. 60% of the physicians used intermittent fasting for their weight control, whereas recommending it to only 10% of their patients. We may propose reasons for the variability in their individual beliefs and recommendations.

Firstly, intermittent fasting is an alternative weight control method; the clinical efficacy, long-term effects, optimal pattern and safety are still under research.



**FIGURE 2** Respondents' attitude towards nutrition advice in the emergency department.



**FIGURE 3** (a) Respondents' belief towards the role of nutrition assessment and counselling and (b) lifestyle and pharmacological intervention on obesity treatment.

Although intermittent fasting has shown positive results in recent years, the dietary guidelines were not up-to-date to keep up with the evidence. Physicians are hesitant to recommend to patients without the support of guideline recommendations. European Society of

Cardiology guidelines recently approved intermittent fasting and time-restricted eating as one of the hypocaloric diet strategies.<sup>27</sup> Doctors may recommend intermittent fasting on a combination of clinical guidelines and their professional judgement or beliefs in the

future. Secondly, ED doctors work in shifts, and the dietary pattern of intermittent fasting may fit their lifestyle. Thirdly, intermittent fasting may not fit all obese patients with special medical conditions, for example, diabetes and eating disorders. It would be difficult for an ED doctor to do long-term follow-up and assessment.

In our study, physicians thought dietitians/nutritionists had a better role in offering nutritional advice and counselling. However, a meta-analysis revealed that physician advice on weight loss significantly impacts patients' attempts to change behaviours related to their weight.<sup>28</sup> Studies showed that doctors were the most recognised health professionals who provided nutrition care to patients followed by dietitians.<sup>29</sup> Patients regard doctors as trustworthy and able to give personalised nutritional advice.

In Hong Kong, our healthcare system heavily relies on the hospital-centric model, where patients often seek medical assistance in the ED, even for non-emergency cases. There is an ongoing demand for primary care delivered in ED for chronic disease states such as obesity, hypertension and diabetes. As emergency physicians, we often deal with the acute presentation of patients with different types of chronic metabolic diseases in daily clinical practice. We can raise the importance of diet to our patients, especially those in the pre-contemplation stages. We should also improve our collaboration with the primary care physicians and dietitians. If the resources are available, EM physicians may refer patients to the Chronic Disease Co-Care Pilot Scheme in the future. A multidisciplinary team with a physician, a nurse, a dietitian, an exercise physiologist and a psychologist seems to be the most effective in gaining trust and combating obesity.<sup>30</sup>

#### 4.4 | Limitations

Our survey response rate was 16.9%, which may suffer from responder bias. Inadequate knowledge and training may, in fact, be lower in the non-responders to the survey. Second, the study is a self-reported survey, which is subject to different forms of bias, including recall bias. Fixed-choice answers were used regarding respondents' attitudes, which might have limited respondents' opinions. Furthermore, this study did not explore whether the attitudes and barriers of the responding EM physician might affect patient outcomes. Lastly, the result may not be generalisable to other regions with different ED settings.

#### 5 | CONCLUSION

We identified common barriers to offering nutritional advice and insufficient nutrition training among EM physicians. Integrating comprehensive nutrition

education into medical training, providing regular evidence-based nutritional courses, improving the accessibility and quality of primary care services and better collaboration with professionals such as dietitians and nutritionists may be a more practical solution to nutritional support for the patient. Enhancing medical nutrition education for patients may significantly impact overall health and lead to a reduction in long-term healthcare expenses associated with chronic diseases and the burden of ED.

#### AUTHOR CONTRIBUTIONS

**Kwun Bun Wong:** Conceptualization; Data curation; Methodology; Project administration; Writing - original draft; Writing - review & editing. **Kwong Hang Yeung:** Data curation; Formal analysis; Visualization; Writing - review & editing. **Shi Ying Christine Li:** Data curation; Supervision; Writing - review & editing. **Kevin Kei Ching Hung:** Data curation; Writing - review & editing.

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#### CONFLICT OF INTEREST STATEMENT

Kevin KC Hung is the editor in chief of the Hong Kong Journal of EM and a co-author of this article. He was excluded from editorial decision-making related to the acceptance and publication of this article. Editorial decision-making was handled independently by Hong Kong Journal of EM Deputy EICs to minimise bias.

#### DATA AVAILABILITY STATEMENT

The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

#### ETHICS STATEMENT

The study was approved by the New Territories East Cluster Research Ethics Committee (CREC no.: 2023.694).

#### CONSENT FOR PUBLICATION

Consent was obtained in this cross-sectional survey.

#### HUMAN RIGHTS

This manuscript was carried out in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines.

#### ORCID

Kwong Hang Yeung  <https://orcid.org/0000-0002-4574-6063>



Kevin Kei Ching Hung  <https://orcid.org/0000-0001-8706-7758>

## PEER REVIEW

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1002/hkj2.12073>.

## REFERENCES

- World Health Organization. Obesity and overweight. Published online March 1, 2024. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- Centre for Health Protection. Obesity. Obesity. Published online 26 April 2023. <https://www.chp.gov.hk/en/healthtopics/content/25/8802.html>.
- Ko GTC, Cockram CS, Chow CC, et al. High prevalence of metabolic syndrome in Hong Kong Chinese--comparison of three diagnostic criteria. *Diabetes Res Clin Pract*. 2005;69(2):160-168. <https://doi.org/10.1016/j.diabres.2004.11.015>
- Powell-Wiley TM, Poirier P, Burke LE, et al. Obesity and cardiovascular disease: a scientific statement from the American heart association. *Circulation*. 2021;143(21):e984-e1010. <https://doi.org/10.1161/CIR.0000000000000973>
- Ko GTC. The cost of obesity in Hong Kong. *Obes Rev*. 2008;9(Suppl 1):74-77. <https://doi.org/10.1111/j.1467-789X.2007.00442.x>
- Garvey WT, Mechanick JL, Brett EM, et al. American Association of Clinical Endocrinologists and American College of Endocrinology comprehensive clinical practice guidelines for medical care of patients with obesity. *Endocr Pract*. 2016;22(7):1-203. <https://doi.org/10.4158/ep161356.esgl>
- Godoroja D, Sorbello M, Margaron M. Airway management in obese patients: the need for lean strategies. *Trends Anaesth Crit Care*. 2019;26-27:30-37. <https://doi.org/10.1016/j.tacc.2019.04.003>
- Garg S, Kim L, Whitaker M, et al. Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019 - COVID-NET, 14 states, March 1-30, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(15):458-464. <https://doi.org/10.15585/mmwr.mm6915e3>
- Stroud T, Bagnall NM, Pucher PH. Effect of obesity on patterns and mechanisms of injury: systematic review and meta analysis. *Int J Surg*. 2018;56:148-154. <https://doi.org/10.1016/j.ijsu.2018.05.004>
- Hatchimonji JS, Kaufman EJ, Vasquez CR, Shashaty MGS, Martin ND, Holena DN. Obesity is associated with mortality and complications after trauma: a state-wide cohort study. *J Surg Res*. 2020;247:14-20. <https://doi.org/10.1016/j.jss.2019.10.047>
- Uwumiro F, Okpuije V, Osiogo EO, et al. Impact of obesity on outcomes of emergency department visits for cardiac chest pain: insights from a nationwide emergency department study. *Cureus*. 2023;15(9):e44540. <https://doi.org/10.7759/cureus.44540>
- Grant P, Newcombe M. Emergency management of the morbidly obese. *Emerg Med Australas*. 2004;16(4):309-317. <https://doi.org/10.1111/j.1742-6723.2004.00614.x>
- Haber JJ, Atti S, Gerber LM, Waseem M. Promoting an obesity education program among minority patients in a single urban pediatric Emergency Department. *Int J Emerg Med*. 2015;8(1):38. <https://doi.org/10.1186/s12245-015-0086-z>
- Murphy R, Al Rasheed A, Keaver L. Effect of a brief dietary counselling intervention on emergency department cardiac chest pain presentations. *BMJ Nutr Prev Health*. 2022;5(2):159-163. <https://doi.org/10.1136/bmjnp-2021-000385>
- Crowley J, Ball L, Hiddink GJ. Nutrition in medical education: a systematic review. *Lancet Planet Health*. 2019;3(9):e379-e389. [https://doi.org/10.1016/S2542-5196\(19\)30171-8](https://doi.org/10.1016/S2542-5196(19)30171-8)
- Lyu Y, Yu H, Jia K, Chen G, He X, Muir R. Emergency nurse and physician perceptions of barriers and facilitators to optimal nutrition in the emergency department: a national cross-sectional survey. *Int Emerg Nurs*. 2023;70:101327. <https://doi.org/10.1016/j.ienj.2023.101327>
- Temple NJ. Survey of nutrition knowledge of Canadian physicians. *J Am Coll Nutr*. 1999;18(1):26-29. <https://doi.org/10.1080/07315724.1999.10718823>
- Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med*. 2002;346(6):393-403. <https://doi.org/10.1056/NEJMoa012512>
- Zeldman J, Mary Andrade J. Identifying physicians' and nurses' nutrition knowledge using validated instruments: a systematic narrative review. *IJNFS*. 2020;9(2):43. <https://doi.org/10.11648/j.ijnfs.20200902.12>
- Bleich SN, Bennett WL, Gudzone KA, Cooper LA. Impact of physician BMI on obesity care and beliefs. *Obesity (Silver Spring)*. 2012;20(5):999-1005. <https://doi.org/10.1038/oby.2011.402>
- Frank E, Rothenberg R, Lewis C, Belodoff BF. Correlates of physicians' prevention-related practices. Findings from the women physicians' health study. *Arch Fam Med*. 2000;9(4):359-367. <https://doi.org/10.1001/archfam.9.4.359>
- Lenders CM, Deen DD, Bistrian B, et al. Residency and specialties training in nutrition: a call for action. *Am J Clin Nutr*. 2014;99(5 Suppl 1):1174S-83S. <https://doi.org/10.3945/ajcn.113.073528>
- Rao R, Hawkins M, Ulrich T, Gatlin G, Mabry G, Mishra C. The evolving role of public health in medical education. *Front Public Health*. 2020;8:251. <https://doi.org/10.3389/fpubh.2020.00251>
- Gibson S, Adamski M, Blumfield M, et al. Promoting evidence based nutrition education across the world in a competitive space: delivering a massive open online course. *Nutrients*. 2020;12(2):344. <https://doi.org/10.3390/nu12020344>
- Ross MA, Hockenberry JM, Mutter R, Barrett M, Wheatley M, Pitts SR. Protocol-driven emergency department observation units offer savings, shorter stays, and reduced admissions. *Health Aff (Millwood)*. 2013;32(12):2149-2156. <https://doi.org/10.1377/hlthaff.2013.0662>
- Jensen MD, Ryan DH, Donato KA, et al. Executive summary: guidelines (2013) for the management of overweight and obesity in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Obesity Society published by the obesity society and American College of Cardiology/American heart association Task Force on practice guidelines. Based on a systematic review from the the obesity expert panel, 2013. *Obesity (Silver Spring)*. 2014;22((Suppl 2)):S5-S39. <https://doi.org/10.1002/oby.20821>
- Visseren FLJ, Mach F, Smulders YM, et al. 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice. *Eur Heart J*. 2021;42(34):3227-3337. <https://doi.org/10.1093/eurheartj/ehab484>
- Rose SA, Poynter PS, Anderson JW, Noar SM, Conigliaro J. Physician weight loss advice and patient weight loss behavior change: a literature review and meta-analysis of survey data. *Int J Obes (Lond)*. 2013;37(1):118-128. <https://doi.org/10.1038/ijo.2012.24>
- Ball L, Desbrow B, Leveritt M. An exploration of individuals' preferences for nutrition care from Australian primary care health professionals. *Aust J Prim Health*. 2014;20(1):113. <https://doi.org/10.1071/PY12127>
- Foster D, Sanchez-Collins S, Cheskin LJ. Multidisciplinary team-based obesity treatment in patients with diabetes: current practices and the state of the science. *Diabetes Spectr*. 2017;30(4):244-249. <https://doi.org/10.2337/ds17-0045>