Factors Influencing Patient's Adherence to Follow-up Postbariatric Surgery: An Asian Experience

Dear Editor,

While obesity continues to be a rising concern in the United States,[1] Singapore is not exempted from this trend and has been experiencing an uprising trend in the prevalence. A steep increase was observed between 2004 and 2010, where the obesity (BMI $\geq$30 kg/m^2) prevalence among adults aged 18 to 69 years shifted from 6.9% to 10.8%, as compared to the previous 7 years, where the prevalence was at 6.0% in 1998.[2] Currently, bariatric surgeries are the most successful and durable intervention for obesity. There are emerging data on these procedures as treatments for individuals with Type 2 diabetes (T2D), as well as a mean to reduce cardiometabolic risk factors.[1] Postoperative follow-ups, involving a multidisciplinary approach for patients who underwent a bariatric surgery, have been recognised as essential in the management and maintenance of sustained weight loss[1] as well as minimising complications.[3] However, there had been a high appointment default rate observed for postoperative follow-up appointments in Tan Tock Seng Hospital (TTSH). From 2001 to 2002, more than 90% of patients defaulted on postsurgical psychologist's appointments while more than 70% of these patients defaulted on postsurgical appointments with the dietitian. The high default rate has an influence in the patient's management and maintenance of sustained weight loss, chances of complications, as well as the economic cost and manpower borne by the hospital. The current study aimed to further explore factors that could lead to a better understanding of the poor adherence to follow-up appointments.

An online questionnaire was designed by collaborative effort between a psychologist and a dietitian to understand the reasons for a patient's non-attendance for appointments. Fifteen randomly arranged statements regarding why patients did not attend appointments were considered based on the factors highlighted by Mitchell and Selmes,[4] who postulated that factors such as patient's "Perceived Benefit of Care", "Perceived Cost of Care", "Barrier to Care", "Doctor-Patient Factors" and "Cues to Act" were related to non-adherence.

Patient's "Perceived Benefit of Care" referred to a patient's perception that the appointment with a psychologist or dietitian was less necessary as the patient believed that he had been coping well with weight loss and any health concerns. "Perceived Cost of Care" considered the financial cost involved, specifically referring to payments for the appointments they attend, which increase with additional appointments. "Barriers to Care" looked at barriers such as the lack of transportation and inconvenient appointments. The "Doctor-Patient Factors" included the therapeutic alliance, perceived helpfulness and communication style. "Cues to Act" referred to reminders for patients to attend the appointments.

Of the patients who attended bariatric surgery in 2011 and 2012, 21 of them had participated in the online questionnaire. As reflected on Table 1, the results suggested that the most influential factor that affected patients' adherence to attending psychologist's appointments was "Patient's Perception of Excess Benefit of Care", where patients (28.57%) thought that they were managing well without follow-up with the psychologist. This was closely followed by "Lacking Cues" to attend the appointment (26.98%), which included receiving an appointment, and/or receiving a reminder of the appointment. The reason of not being given an appointment stood out among the others. Factors such as "Financial Cost" of attending the appointment (16.67%) and "Barriers to Care" (11.43%), e.g. being unable to be away from work, and appointment scheduling challenges, also affected patient's adherence to attending psychologist's appointments.

When considering factors that affected patient's adherence to attending the appointment with the dietitian, "Patient's Perception of Excess Benefit of Care" had the most influence on their adherence (19.05%), where patients do not perceive the need to see the dietitian if they are doing well. This was closely followed by the "Barriers to Care" (18.10%); "Financial Cost" (14.29%); "Lacking Cues to Attend the Appointment" (6.35%), and "Dietitian-Patient Relationship" (1.59%).

The reasons for non-adherence to postoperative follow-up appointments were multifactorial and they differed between the psychologist's and dietitian's appointments. However, the common factor, which also surfaced as the most influencing factor among the 2 appointments, was

Table 1. Factors Influencing Psychologist's and Dietitian's Appointment

Factors	Influencing Psychologist's Appointment (%)	Influencing Dietitian's Appointment (%)
Barriers to care		
Barriers such as the lack of transportation and inconvenient appointments.	11.43	18.10
Financial cost		
The financial cost involved, referring specifically to the payments for the appointments they attend, which increases with additional appointments.	16.67	14.29
Lacking cues to attend the appointment		
Reminders to attend the appointments.	26.98	6.35
Patient's perception of excess benefit of care		
Patient's perception that the appointment with psychologist or dietitian was less necessary as the patient believed that he had been coping well with weight loss and any health concerns.	28.57	19.05
Psychologist-/dietitian-patient relationship		
This included the therapeutic alliance, perceived helpfulness and communication style.	0.00	1.59

their perception of excess benefit of care, which may be the crux of the challenge in adherence.

The perceived excess benefits of care may have stemmed from the lack of awareness of the importance of postoperative follow-up, which may possibly influence their motivation to remember and keep their appointments. Also, postoperative follow-ups may gain lesser priority, when placed on the scale with patients' work and other commitments, with their limited resources such as time and finances in consideration.

Patients could possibly have considered the bariatric surgery as the end-point to their weight and health concerns, failing to realise that bariatric surgery is a means and a beginning of a journey towards a healthier lifestyle management. Thus, patients perceived postoperative follow-up as unnecessary.

Moreover, patients lose weight significantly during the first year after the surgery.[5] They may be pleased with the positive changes in their weight and health condition, which are visibly noticeable. These further influence their perception of benefit of care in attending to the postoperative follow-up appointments, perceiving them as excess.

Though the validity of the present study remains to be verified in studies with a larger sample size, the factors identified in the present study shed light on potential interventions that can be implemented to improve adherence to postoperative follow-up appointments. Specifically, more emphasis can be placed on educating patients during the preoperative phase, regarding the importance of postoperative follow-up and management, thus altering the perception of excess benefit of care. With the lack of awareness of the importance of postoperative follow-up and management, manipulating other factors such as providing cues to attend the appointments, accommodating in appointment scheduling, and adjusting financial cost without educating the importance of postoperative follow-up and management would be futile in improving adherence.

REFERENCES

1. Mechanick JI, Youdim A, Jones DB, Garvey WT, Hurley DL, McMahon MM, et al. Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient—2013 update: Cosponsored by american association of clinical endocrinologists, The obesity society, and american society for metabolic & bariatric surgery*. Obesity 2013;21:S1-S27.
2. Ministry of Health, Singapore. Disease Burden Study: 2010. Available at: http://www.moh.gov.sg/content/moh_web/home/statistics/Health_Facts_Singapore/Disease_Burden.html. Accessed 6 December 2013.
3. Wheeler EC, Sutton D. Patient Adherence to Care and Quality of Life after Bariatric Surgery. Health Promotion Innovations. Available at: https://stti.confex.com/stti/congrs07/techprogram/paper_33896.htm. Accessed 6 December 2013.
4. Mitchell AJ, Selmes T. Why don't patients attend their appointments? Maintaining engagement with psychiatric services. Advances in Psychiatric Treatment 2007;13:423-34.
5. Sjöström L, Narbro K, Sjöström CD, Karason K, Larsson B, Wedel H, et al. Effects of bariatric surgery on mortality in Swedish obese subjects. N Engl J Med 2007;357:741-52.

Adrian HP Toh, [1]*BSc (Hons)*, Kavita, [2]*BND*, Su Zheng, [3]*BN*, Jaideepraj Rao, [3]FAMS, Aaryan Koura, [3]*MBBS*

[1]Psychology Services, Tan Tock Seng Hospital, Singapore
[2]Nutrition and Dietetics, Tan Tock Seng Hospital, Singapore
[3]Department of General Surgery, Tan Tock Seng Hospital, Singapore

Address for Correspondence: Mr Adrian Toh, Tan Tock Seng Hospital, 11 Jalan Tan Tock Seng, Singapore 308433.
Email: adrian_hp_toh@ttsh.com.sg