PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Patient and practice characteristics predicting attendance and completion at a specialist weight management service in the UK: a cross-sectional study
AUTHORS	Blane, David; McLoone, Philip; Morrison, David; MacDonald, Sara; O'Donnell, Catherine

VERSION 1 – REVIEW

REVIEWER	R Welbourn Dept Upper GI & Bariatric Surgery Musgrove Park Hospital Taunton TA1 5DA UK
REVIEW RETURNED	30-Jul-2017

GENERAL COMMENTS	This is a novel description of patient characteristics of those attending weight management services in Glasgow. The paper is well written, the methodology appears sound and the results of interest to the readership. The main issue that the paper addresses is the very low referral rates to the clinic from primary care of patients who could benefit and the subsequent disengagement with follow up. The findings are important for development of obesity services in the UK. Major points 1 Completion is defined as attending 4 sessions. Please describe how many sessions were offered and over what time period. Please describe what the motivation was for patients to attend 4 sessions. Was this to progress to bariatric surgery? What happened or was offered at each session? Can the authors speculate as to why the patients disengaged with follow up? 2 What team members saw the patients at the sessions and how was this structured? 3 For completeness the number of patients excluded from analysis due to 'cleaning' and exclusion of referrals outside GGC and from other specialties should be reported. 4 Do the authors have any data on opportunistic identification of obesity that might influence the referral rates between training and non-training practices?

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	Minor points 1 The authors do not mention pharmacotherapy. Was this offered? 2 Patient involvement in the study might have helped but their lack is not a detriment. 3 Do the authors have data on co-morbidities of the referred patients? 4 Page 6 last sentence of Methods: 'outside' not 'out with' GGC.

REVIEWER	Dr Richard Webb Liverpool John Moores University, UK
REVIEW RETURNED	02-Aug-2017

GENERAL COMMENTS	After reading the article it is clear that the study has been well conducted and the resulting data has been appropriately analysed. Furthermore, the paper has been concisely written in an elegant manner and the findings clearly and logically presented. Although it is often customary for reviewers to request amendments, I feel that by doing so would be to find fault where none exist and would only serve to delay the publication of this important research which I believe should be disseminated as soon as possible. Therefore, I am of the opinion that this article is suitable for publication in its present state with no amendments required.

REVIEWER	Shahrad Taheri Professor of Medicine Weill Cornell Medicine - Qatar
REVIEW RETURNED	05-Aug-2017

GENERAL COMMENTS	This is an important evaluation as managing obesity is expensive and important to get the best out of services. While the authors have some interesting findings, the data could have been examined in more detail to understand the situation better. Firstly, it will be useful to explain the referral process in more detail; what is assessed, who refers, what are the waiting times. What information is provided to patients when referral is made. Apart from socio-economic status for example, it would be important to address employment status, ethnicity, obesity co-morbidities, medications, smoking status, hospital attendance, and previous attendance at lower tier services. From the practice point of view, it will be essential to know what other obesity services are provided and who is responsible for referrals. Where there any differences in whether other services are provided by the practices such as diabetes care, specialist clinics etc. Minor correction: It is important to know about the complexity of patients as maybe the service should consider different types of patients to achieve the best outcomes.

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	Unfortunately, no weight outcomes are presented which weakens the report. Weight loss and improvement in co-morbidities would be a good reflection of success and continued attendance. Page 3 - Confounder instead of Co-founder Please give units throughout for BMI and age Describe how many referrals are from outside the GGC - if there is a useful number, then it would be worthwhile to know if this is working or not Please define all abbreviations in the Tables.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1. R Welbourn

Comment: This is a novel description of patient characteristics of those attending weight management services in Glasgow. The paper is well written, the methodology appears sound and the results of interest to the readership. The main issue that the paper addresses is the very low referral rates to the clinic from primary care of patients who could benefit and the subsequent disengagement with follow up. The findings are important for development of obesity services in the UK.

Response: We would like to thank you for your positive comments. We address each of them in turn below.

Comment: Completion is defined as attending 4 sessions. Please describe how many sessions were offered and over what time period. Please describe what the motivation was for patients to attend 4 sessions. Was this to progress to bariatric surgery? What happened or was offered at each session? Can the authors speculate as to why the patients disengaged with follow up?

Response: The following detail has been added to the Methods section (pages 5 - 6) to answer these points:
Eligible patients are referred electronically by their GP or practice nurse (a small proportion come from secondary care referrals) and are required to 'opt in' to the service within 2 weeks of referral. They are then seen (usually within 1 or 2 months) by a dietitian at an initial assessment, who helps to direct them to an appropriate group or professional. Some patients (e.g. those with possible binge eating disorder) may receive further input from a clinical psychologist or physiotherapist. Most patients are seen in groups of no more than 16 people, led by a NHS dietitian, at a number of venues throughout Glasgow and Clyde. Phase 1 of the intervention includes nine sessions (90 mins each) delivered fortnightly over a 16-week period. Further treatment options, including prescribed low-calorie diet, pharmacotherapy (orlistat), and bariatric surgery, are only available after completion of phase 1 of the programme. A previous paper has described the service and its weight loss outcomes in more detail. This study is not designed to explain why patients disengage with follow-up, but we do offer some possible explanations in the 'Unanswered questions and future research' section in the Discussion, related to timing of classes, patient motivation, and area-based barriers:
In terms of patient characteristics, one might hypothesise, for instance, that attendance is more likely for older adults because they are less likely to be working and may be more able to attend appointments during working hours. Similarly, it is possible that those adults with a higher BMI may be more motivated to attend as they are experiencing more problems (functional or health-related) as a result of their weight, and may need more support to manage their weight.

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With regard to practice characteristics, lower attendance by patients referred from training practices could be related to more referrals done by GP trainees, without perhaps knowing the patient well or fully discussing the implications of referral. Lower attendance from more deprived practices, over and above the effect of individual deprivation status, could point to area-based barriers to attendance such as poorer transport infrastructure or an unwillingness to cross territorial boundaries.

Comment: 2 What team members saw the patients at the sessions and how was this structured?

Response: As for point 1, above, the following paragraph addresses this question:

They are then seen (usually within 1 or 2 months) by a dietitian at an initial assessment, who helps to direct them to an appropriate group or professional. Some patients (e.g. those with possible binge eating disorder) may receive further input from a clinical psychologist or physiotherapist. Most patients are seen in groups of no more than 16 people, led by a NHS dietitian, at a number of venues throughout Glasgow and Clyde.

Comment: 3 For completeness the number of patients excluded from analysis due to 'cleaning' and exclusion of referrals outside GGC and from other specialties should be reported.

Response: The following sentences have been added to detail the number of patients excluded due to 'cleaning' and those from outside GGC/other specialities (Page 6):

146 cases (1.5%) were excluded in this process.

The small number of referrals (<2% of total referrals) from outside GGC and from specialist services were excluded prior to receiving the data.

Comment: 4 Do the authors have any data on opportunistic identification of obesity that might influence the referral rates between training and non-training practices?

Response: We do not have any data on opportunistic identification of obesity that might influence the referral rates between training and non-training practices. Many of the referrals included in this dataset will have arisen from opportunistic identification of obesity, by either the patient's GP or practice nurse; some will have been specifically requested by eligible patients who were aware of the service. Unfortunately, it is not possible to determine who initiated the referral, or indeed whether the referral was made by a GP principal or a GP trainee.

Comment:
Minor points

The authors do not mention pharmacotherapy. Was this offered?

Response: Pharmacotherapy is offered in Phase 2 of the service. We have added in the following sentence to clarify this (Page 6):

Further treatment options, including prescribed low-calorie diet, pharmacotherapy (orlistat), and bariatric surgery, are only available after completion of phase 1 of the programme.

Comment: Patient involvement in the study might have helped but their lack is not a detriment.

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Response: We thank the reviewer for this comment. This was a secondary analysis of primary care referral data and, as such, patient involvement was not possible.

Comment: 3 Do the authors have data on co-morbidities of the referred patients?

Response: Unfortunately the data on co-morbidities of the referred patients were incomplete (data were extracted from the electronic referral, which under-represented the true extent of co-morbidities). It was not, therefore, included in the final analysis.
The following sentence has been added, on Page 7: Data on co-morbidities of the referred patients were incomplete so not included in the final analysis.It was not, therefore, included in the final analysis. The following sentence has been added, on Page 7:

Comment: Page 6 last sentence of Methods: 'outside' not 'out with' GGC.

Response: This sentence has been changed, as suggested.

Reviewer 2: Dr Richard Web

Comment: After reading the article it is clear that the study has been well conducted and the resulting data has been appropriately analysed. Furthermore, the paper has been concisely written in an elegant manner and the findings clearly and logically presented.

Although it is often customary for reviewers to request amendments, I feel that by doing so would be to find fault where none exist and would only serve to delay the publication of this important research which I believe should be disseminated as soon as possible.

Therefore, I am of the opinion that this article is suitable for publication in its present state with no amendments required.

Response: Many thanks for your extremely positive comments. We very much appreciate them.

Reviewer 3: Shahrad Taheri

Comment: This is an important evaluation as managing obesity is expensive and important to get the best out of services. While the authors have some interesting findings, the data could have been examined in more detail to understand the situation better.

Response: Thank you for your very positive comments; addressing these comments has increased the clarity of the paper and, we hope, makes it more accessible to an international audience.
We address each point below.

Comment: Firstly, it will be useful to explain the referral process in more detail; what is assessed, who refers, what are the waiting times. What information is provided to patients when referral is made.

Response: As noted above in response to Reviewer 1, the following detail has been added to the Methods section to answer these points (see Pages 5-6):

Eligible patients are referred electronically by their GP or practice nurse (a small proportion come from secondary care referrals) and are required to ‘opt in’ to the service within 2 weeks of referral. They are then seen (usually within 1 or 2 months) by a dietitian at an initial assessment, who helps to direct them to an appropriate group or professional.

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Some patients (e.g. those with possible binge eating disorder) may receive further input from a clinical psychologist or physiotherapist. Most patients are seen in groups of no more than 16 people, led by a NHS dietitian, at a number of venues throughout Glasgow and Clyde. Phase 1 of the intervention includes nine sessions (90 mins each) delivered fortnightly over a 16-week period. Further treatment options, including prescribed low-calorie diet, pharmacotherapy (orlistat), and bariatric surgery, are only available after completion of phase 1 of the programme. A previous paper has described the service and its weight loss outcomes in more detail.

Comment: Apart from socio-economic status for example, it would be important to address employment status, ethnicity, obesity co-morbidities, medications, smoking status, hospital attendance, and previous attendance at lower tier services.

Response: We agree that additional information about the referred patients may have strengthened the study, but this data was not available. We have added the following sentences to take account of this (Page 7):

Data on co-morbidities of the referred patients was incomplete so was not included in the final analysis. There was no data on other variables that may have been of interest, such as ethnicity or smoking status.

We also discuss ethnicity in the Discussion section, Page 20:

Thus the findings are broadly generalizable to other parts of the NHS and beyond, particularly in terms of gender, age and socioeconomic status; however there were no data on ethnicity. While Scotland overall has a lower percentage of the population who are from minority ethnic groups – at 4% overall – this Health Board region has the highest percentage of minority ethnic groups, with the Asian background (defined as Asian/Asian Scottish/Asian British) the largest population group

The Scottish Index of Multiple Deprivation, used in this paper as a measure of socio-economic status, includes data on 38 indicators grouped into 7 domains of income, employment, education, health, access to services, crime, and housing.

Data on medications and hospital attendance is not routinely collected by GCMWS. Data on attendance at lower tier services is also not routinely available, and these services are patchy and often short-term, due to funding restraints.

Comment: From the practice point of view, it will be essential to know what other obesity services are provided and who is responsible for referrals. Where there any differences in whether other services are provided by the practices such as diabetes care, specialist clinics etc.

Response: We have added the following sentence to the manuscript in response to this point (Page 5).

For those patients with obesity that do not meet the eligibility criteria (i.e. BMI 30-35 kg/m2 without weight-related co-morbidities), GPs and practice nurses can signpost patients to healthy eating classes or physical activity resources, where available.

Diabetes care for patients with Type 2 diabetes is provided routinely by all general practices in Scotland, with specialist diabetes care available on referral for more complex Type 2 cases and for patients with Type 1 diabetes.

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Comment: Minor correction:
It is important to know about the complexity of patients as maybe the service should consider different types of patients to achieve the best outcomes.

Response: As outlined in the Methods section, the service is:
…available to patients aged 18 years and over with complex obesity (defined as body mass index (BMI) of ≥30 kg/m2 with obesity-related co-morbidities, or BMI of ≥35 kg/m2 alone).

The mean BMI of those patients referred in the present study was 41.4 kg/m2, reflecting some of the complexity of patients seen by the service.

Comment: Unfortunately, no weight outcomes are presented which weakens the report. Weight loss and improvement in co-morbidities would be a good reflection of success and continued attendance.

Response: We agree that weight loss and improvement in co-morbidities are key markers of the success of a weight management service. However, the purpose of this study was not to evaluate the services itself, but rather to "use individual and practice level data to explore predictors of attendance and completion at a specialist weight management service".

We cite a previous paper (Logue et al) which describes weight loss outcomes from GCWMS on Page 19:

There was, however, no available data on weight loss outcomes in this study population, which is a limitation. However, previous work conducted in this weight management service found that 26% of those completing Phase 1 attendance had lost at least 5kg.10

The current paper used the same definition of 'completion' as that of Logue et al.

Comment: Page 3 - Confounder instead of Co-founder

Response: This sentence has been removed, as the Strengths and Limitations section has been re-written.

Comment: Please give units throughout for BMI and age

Response: The manuscript has been amended throughout to include units for BMI (kg/m2) and age (years) – highlighted in yellow where added.

Comment: Describe how many referrals are from outside the GGC - if there is a useful number, then it would be worthwhile to know if this is working or not

Response: As noted in the response to Reviewer 1, referrals from outside GGC comprise a small proportion of total referrals:

The small number of referrals (<2% of total referrals) from outside GGC and from specialist services were excluded prior to receiving the data.

Comment: Please define all abbreviations in the Tables.

Response: Thank you for highlighting this omission. We have now defined all abbreviations used in the Tables.

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VERSION 2 – REVIEW

REVIEWER	Richard Welbourn Musgrove Park Hospital Taunton TA1 5DA UK
REVIEW RETURNED	08-Sep-2017

GENERAL COMMENTS	The authors have responded nicely to the reviewers' comments.

REVIEWER	Shahrad Taheri Weill Cornell Medicine - Qatar
REVIEW RETURNED	31-Aug-2017

GENERAL COMMENTS	The authors have addressed comments adequately.

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