Competencies and skills to enable effective care of severely obese patients undergoing bariatric surgery across a multi-disciplinary health care perspective: a systematic review protocol

Audrey Stephen PhD, MSc, BSc, RGN¹
Giovanna Bermano PhD¹
Duff Bruce MBChB, FRCS (Edinburgh)²
Pamela Kirkpatrick MSc, PgCertHELT, BA, MA(Hons), RM, RGN¹,³

1. Robert Gordon University Aberdeen Scotland,
2. Aberdeen Royal Infirmary Aberdeen, Scotland,
3. Director, The Scottish Centre for Evidence-based Multi-professional Practice: An Affiliate Centre of the Joanna Briggs Institute

Corresponding Author
Audrey Stephen
a.i.stephen@rgu.ac.uk

Review question/objective
The objective of this review is to synthesize the best available qualitative evidence on the perceived competencies and skills required by members of a multidisciplinary bariatric care team to provide safe, meaningful and appropriate care for severely obese patients undergoing bariatric surgery.

Background
Severe and complex obesity (defined as a BMI of 40kg/m² or above) is a disease state associated with a higher risk of mortality¹ and of developing a range of health problems that may reduce the lifespan by up to 10 years.² Obesity is the fifth leading cause of mortality globally, with up to 2.8 million adults dying each year as a result.³ It is accountable for 44% of the burden of diabetes; 23% of the number of cases of ischemic heart disease, and between 7-41% of cancers.³ In addition, the incidence of severe obesity has increased faster than more moderate cases of obesity, and shows no signs of slowing.⁴ Bariatric surgery is the only intervention that has been found to produce sustained weight reduction, reduce the incidence of co-morbidities, and decrease early mortality.² The costs to the health care system are subsequently reduced; as is the need for many prescription drugs.⁵

In the National Health Service (NHS) in Scotland between 2000 and 2009, a total of 189 bariatric procedures took place. However, numbers are increasing and currently an average rate of three bariatric procedures per 100,000 people are carried out each year.⁶ This equates to approximately 156
procedures annually across the 13 centers providing this type of specialized service. Procedures are also carried out in the private sector and for the NHS in the independent sector, although similar statistics are unavailable for these sectors. There are a range of procedures offered to patients including endoscopic insertion of gastric balloons and endobarrier, surgical gastric bypass, adjustable gastric banding, biliopancreatic diversion, sleeve gastrectomy, and vertical banded gastroplasty. Most operative procedures are carried out laparoscopically, decreasing the recovery time and complication risk for the patient. In order to provide a service to bariatric patients that is both efficient and cost effective, the British Obesity and Metabolic Surgery Society (BOMSS) values bariatric care that is safe, sensitive, and recognises best practice. However, BOMSS also acknowledges that present services are operated under a range of different specifications; with a range of perceptions of what constitutes safe delivery and minimum standards for good practice.

BOMSS proposes core requirements for a bariatric service that include systems within institutions and environmental infrastructures that are suited to providing an effective bariatric service. For example, as most bariatric surgery is laparoscopic, high definition video equipment is viewed as essential. Within institutions, whether in the NHS, independent or private sectors, the key factor ensuring optimal care is provided to bariatric patients is the availability of a multidisciplinary team (MDT) that is led by specialist bariatric surgeons and includes team members who are trained and competent with particular specialized knowledge, skills and attitudes. Several different workforces may be involved in the provision of these services; for example, the National Institute for Health and Clinical Excellence (NICE) recommends bariatric surgical teams comprise of physicians, surgeons, bariatric nurses, and bariatric dietitians. Other staff may include psychologists, anaesthetists, and physiotherapists. NICE indicate MDTs should provide patients with: pre-operative assessment, information on procedures, post-operative assessment, management of co-morbidities, psychological support, information and access to plastic surgery, and access to specialist equipment e.g. scales or Zimmer frames. However, a recent report on bariatric services in England indicated that provision of a structured MDT, which constitutes best practice, across NHS and private services was inconsistent. In addition, the relative immaturity of bariatric services precludes the availability of studies of outcome and effectiveness of case management programmes. Perceptions and estimations of competency of practice for particular bariatric surgeons and bariatric surgery centres is often based on analysis of mortality, morbidity, length of hospital stay and statistics related to volume of operations carried out. A meta-analysis by Markar et al has shown that mortality and morbidity is reduced at high volume centres and by high volume surgeons. There was insufficient data for analysis related to length of hospital stay. High volume surgeons and centers may indicate greater clinical competence.

The preparation of the MDT is seen as key to a high quality service, yet currently there is little clarity about the education, training, skills and attitudes that constitute competency. It is the intention of this systematic review to explore the requirements to be met within the MDTs that are perceived to be essential for safe, meaningful and appropriate care of severely obese patients undergoing bariatric surgery. It is anticipated that the scope of the review will enable identification of required competencies and level of performance to be achieved by each workforce from a policy, healthcare professional, and/or patient perspective. It may also indicate the minimum level of competence required for a high quality bariatric service, and provide directions for the extent of education and training of members of the MDT required for the minimum level to be achieved.
Several tools will be used to review the existing evidence. In particular, a review of the published papers and journals will be carried out including any systematic reviews, qualitative research, international guidelines, narrative, and opinion. The findings of the review will provide the basis for the development of policies and standards for the management of severe and complex obesity. Moreover, it will identify any gaps in the knowledge and allow the development of new courses to fill educational gaps. A search of the Cochrane Library, The Joanna Briggs Institute Library, Medline, CINAHL and the IngentaConnect databases has revealed no existing review of competencies for healthcare staff for the care of bariatric surgery patients.

Keywords

bariatric; competencies; multidisciplinary team; skills; systematic review

Inclusion criteria

Types of participants

The review will focus on specialist surgical services for patients with severe and complex obesity (BMI ≥40), provided internationally within public, independent or private sectors. Study participants of interest are members of the MDT providing the specialist services. The review will initially concentrate on four key roles within the MDT; all identified as key contributors to the best possible provision of care for bariatric patients:

a) specialist bariatric surgeon; b) specialist bariatric nurse; c) specialist bariatric dietitian; d) psychologist and/or psychiatrist.

Where available, literature pertaining to other practitioners with the key roles listed below will be included:

e) physiotherapists; f) specialist physicians; g) anesthetists; h) radiographers and radiologists.

The particular competencies of the individual MDT members to be explored pertain to the specialist knowledge, skills, and understanding required in order to provide a high quality service.

Phenomena of interest

The phenomena of interest for the review are the competencies and skills required by multidisciplinary team members to provide care for severely obese patients undergoing bariatric surgery. All types of bariatric procedures are of relevance to the review.

Types of studies

The review will consider studies that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, and action research. In addition, policy documents, standards for clinical care, guidelines, narrative, opinion and discussion papers will be considered.

Search strategy

The literature search strategy is designed to access both published and unpublished materials using the JBI three step search strategy. Firstly, a limited search of CINAHL and MEDLINE will be conducted
followed by analysis of the text words contained to identify any relevant keywords in the title, abstract and subject descriptors, and of the index terms used to describe the article. Secondly, a search utilizing the keywords and index terms identified will be performed across all relevant databases. Thirdly, the reference lists and bibliographies of the previously identified articles will be searched. The following terms are proposed as suitable descriptors to initiate the search and will be adapted to suit the requirements of each database:

a) hospital settings / public sector / independent / private / surgery / surgical

b) bariatric/bariatric surgery

c) obesity/severe obesity/complex obesity/morbid obesity

d) competence/competency/competencies

e) skills

f) care

g) multidisciplinary

h) surgeon

i) nurse

j) dietitian

k) anesthetist

l) psychologist

m) psychiatrist

n) metabolic physician

o) radiographer

p) physiotherapist

q) policy

r) standards

s) guidelines

t) qualitative

u) interviews

Appropriate Boolean operators such as AND/OR and NOT will be used. Bariatric surgery was uncommon in the UK prior to 1995, and for this reason only papers and articles published from 1995 to July 2013 will be included. Included papers will be published in the English language.

The following selected databases will be searched:

a) CINAHL

b) Medline
In addition, gray literature will be searched. This will include:

a) ProQuest Dissertations and Theses / British Library EThos
b) Conference Proceedings
c) AHRQ (Agency for Healthcare Research and Quality)
d) Google Scholar
e) National Institute for Health & Social Care Research (IHSCR)

**Assessment of methodological quality**

Papers selected for inclusion in the review will be independently appraised for methodological quality by two reviewers before inclusion in the review, using the relevant Joanna Briggs Institute (JBI) online programme for systematic review. Qualitative papers will be assessed using the Qualitative Assessment and Review Instrument, JBI-QARI (Appendix I). Narrative, opinion and other texts will be assessed using the Narrative, Opinion, and Text Assessment and Review Instrument, JBI-NOTARI (Appendix I). Policy documents, standards and guidelines will also be assessed using JBI-NOTARI. Where there is disagreement between the primary and secondary reviewer, the problem will be resolved through discussion, or with a third reviewer as required.

**Data collection**

Data will be extracted independently by two researchers from the papers selected for inclusion in the review using the standardised data extraction tools from JBI (Appendix II). The extracted data will include specific details about the populations studied, study methods, and outcomes of significance to the review question and objectives. The information extracted from policy documents, standards and guidelines will be collated and charted in a form that will be tailored according to the content of the documents selected for inclusion in the review. Study authors will be contacted by email for further information as necessary.
Data synthesis

Qualitative papers will, where possible, be pooled using JBI-QARI. This will involve the synthesis of findings to generate a set of statements that represent this assembling of the findings (Level 1 findings), rated according to their quality, and categorising these findings on the basis of similarity in meaning (Level 2 findings). These categories are then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesised findings (Level 3 findings) that can be used as a foundation for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form. The level of congruency between the findings and supporting data from the primary studies will be graded to provide an overall interpretation of the credibility of the evidence (unequivocal, credible, or unsupported).

Textual papers will, where possible, be pooled using JBI-NOTARI. This will involve the synthesis of conclusions into categories, which are then subjected to a meta-synthesis in order to produce a single comprehensive set of findings (through a similar process to that stated above for JBI-QARI). Where textual pooling is not possible (eg for policies, standards and guidelines), the conclusions will be presented in narrative form.

Conflicts of interest

There are no conflicts of interest regarding the proposed systematic review.

Acknowledgements

The Severe and Complex Obesity Treatment Service (SCOTS) has provided funding for the review. The School of Nursing and Midwifery and the Institute for Health and Welfare Research, Robert Gordon University, are acknowledged for supporting Dr. Stephen and Dr Bermano. The contributions of Mr Duff Bruce, Consultant Upper Gastrointestinal and Bariatric Surgeon, Aberdeen Royal Infirmary, and Dr Susan Klein, Institute for Health and Welfare Research, Robert Gordon University to the planning and organisation of the research are acknowledged. Mr Bruce is also a visiting Professor at Robert Gordon University.
References


Appendix I: Appraisal instruments

QARI appraisal instrument

**JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is there congruity between the stated philosophical perspective and the research methodology?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is there congruity between the research methodology and the research question or objectives?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is there congruity between the research methodology and the methods used to collect data?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is there congruity between the research methodology and the representation and analysis of data?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is there congruity between the research methodology and the interpretation of results?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Is there a statement locating the researcher culturally or theoretically?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Is the influence of the researcher on the research, and vice-versa, addressed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Are participants, and their voices, adequately represented?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall appraisal:  

Include  

Exclude  

Seek further info.  

Comments (including reason for exclusion)

---

doi: 10.11124/jbisir-2013-744
NOTARI appraisal instrument

**JBI Critical Appraisal Checklist for Narrative, Expert opinion & text**

Reviewer ..................................... Date ............................................

Author ........................................ Year ........ Record Number ............

1. Is the source of the opinion clearly identified? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable
2. Does the source of the opinion have standing in the field of expertise? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable
3. Are the interests of patients/clients the central focus of the opinion? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable
4. Is the opinion's basis in logic/experience clearly argued? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable
5. Is the argument developed analytically? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable
6. Is there reference to the extant literature/evidence and any incongruency with it logically defended? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable
7. Is the opinion supported by peers? [ ] Yes [ ] No [ ] Unclear [ ] Not Applicable

Overall appraisal: Include [ ] Exclude [ ] Seek further info [ ]

Comments (including reason for exclusion)

_________________________________________________________________

_________________________________________________________________
Appendix II: Data extraction instruments

QARI data extraction instrument

**JBI QARI Data Extraction Form for Interpretive & Critical Research**

Reviewer: __________________________  Date: __________________________

Author: __________________________  Year: __________________________

Journal: __________________________  Record Number: __________________________

**Study Description**

Methodology

Method

Phenomena of Interest

Setting

Geographical

Cultural

Participants

Data analysis

Authors Conclusions

Comments

Complete

Yes □  No □
<table>
<thead>
<tr>
<th>Findings</th>
<th>Illustration from Publication (page number)</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unequivocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction of findings complete

Yes [ ]
No [ ]
NOTARI data extraction instrument

**JBI Data Extraction for Narrative, Expert opinion & text**

Reviewer .................................. Date ..............................................

Author .................................. Year .......... Record Number ..........

**Study Description**

Type of Text: 

Those Represented: 

Stated Allegiance/ Position: 

Setting 

Geographical 

Cultural 

Logic of Argument 

Data analysis 

Authors Conclusions 

Reviewers Comments 

Data Extraction Complete Yes ☐ No ☐
<table>
<thead>
<tr>
<th>Conclusions</th>
<th>Illustration from Publication (page number)</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unequivoc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Include</td>
<td>Yes ☐</td>
<td>No ☐</td>
</tr>
</tbody>
</table>