Role of the family doctor in the management of adults with obesity: a scoping review

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ABSTRACT

Objectives Obesity management is an important issue for the international primary care community. This scoping review examines the literature describing the role of the family doctor in managing adults with obesity. The methods were prospectively published and followed Joanna Briggs Institute methodology.

Setting Primary care. Adult patients.

Included papers Peer-reviewed and grey literature with the keywords obesity, primary care and family doctors. All literature published up to September 2015. 3294 non-duplicate papers were identified and 225 articles included after full-text review.

Primary and secondary outcome measures Data were extracted on the family doctors’ involvement in different aspects of management, and whether whole person and person-centred care were explicitly mentioned.

Results 110 papers described interventions in primary care and family doctors were always involved in diagnosing obesity and often in recruitment of participants. A clear description of the provider involved in an intervention was often lacking. It was difficult to determine if interventions took account of whole person and person-centredness. Most opinion papers and clinical overviews described an extensive role for the family doctor in management; in contrast, research on current practices depicted obesity as undermanaged by family doctors. International guidelines varied in their description of the role of the family doctor with a more extensive role suggested by guidelines from family medicine organisations.

Conclusions There is a disconnect between how family doctors are involved in primary care interventions, the message in clinical overviews and opinion papers, and observed current practice of family doctors. The role of family doctors in international guidelines for obesity may reflect the strength of primary care in the originating health system. Reporting of primary care interventions could be improved by enhanced descriptions of the providers involved and explanation of how the pillars of primary care are used in intervention development.

INTRODUCTION

Obesity is recognised as a risk factor for the development of chronic disease and is often comorbid with diseases such as diabetes, osteoarthritis, cardiovascular disease and depression.1 As such, obesity is a condition that is commonly associated with a larger set of health issues encountered by an individual. As in all cases of multimorbidity, a person’s care will benefit from the coordinated and continuous care offered by an interdisciplinary team in primary care.2 By exploring the role of the family doctor, we are not questioning the importance of team-based care. Instead, we aim to explore how family doctors are represented in the broad literature to further understand the profession’s role. This understanding is important when interdisciplinary teams are not accessible (eg, rural location), affordable (eg, health insurance differentials) or part of the patient’s preference for care.3–6 Thus, the literature that focuses on the management of adults with obesity by the family doctor is important to understand.

With the rising numbers of adults living with obesity and related chronic diseases, there is an increasing demand from health systems for primary care, and family doctors in particular, to identify and manage this as a chronic condition.6 With this changing landscape, it was anticipated that the academic literature would explore the effectiveness of primary
care, as well as the involvement of different practitioners in obesity management. However, our initial explorations into this literature found a lack of clarity in this area. A scoping review was chosen to explore emerging patterns, and gaps, in the literature based on the role of the family doctor in managing adults with obesity.

The term used to describe a family doctor varies internationally, and includes general practitioner and family physician. The term ‘primary care physician’, which stems from the USA, includes paediatricians, obstetricians and internists. In this review, we define ‘family doctor’ as a physician with specialist training in primary care who practises in the community, as an expert generalist.

Different practitioners will bring varying strengths and limitations to any intervention and it is important for family doctors to understand what skills they offer in the setting of obesity management. The importance of understanding provider role is demonstrated in the methodology of critical realism where realist evaluation acknowledges the importance of context of any intervention. Translating rigorous scientific trials into policy and practice is challenging and realist evaluation is an increasingly used tool to inform effective translation of evidence.

Part of understanding context in the realist evaluation is knowing the type of provider, and their experience level, in delivering an intervention. This scoping review provides an overview of the role of the family doctor in interventions, clinical overviews and opinions, observed practice and clinical guidelines.

The pillars of primary care—being the first point of health system entry, delivering continuous, whole person (ie, concerned with every body system and the mind) and person-centred care (ie, elucidates comorbidities, social circumstances, and maintains the beliefs and values of the person at the heart of management for all health problems in all patients in all stages)—are well established. Other tiers of the health system may provide some, but not all, of the four pillars. Each of these concepts needs to be present in the management of a patient to gain the full benefits of primary care. Patient management that is not based around these four pillars is unlikely to reap the benefits of coordinated, comprehensive, expert generalist care.

This scoping review aims to examine and map the current research base, and broader literature, for the role of the family doctor in managing adults with obesity.

The objectives, inclusion criteria and methods of analysis for this review were specified in advance and documented in a protocol. The scoping review questions we aimed to answer were:

1. What supporting evidence (both primary and secondary) do we have for the role family doctors play in obesity management for adults in primary care?
2. What is the role of the family doctor in managing obesity as a primary risk as supported by the evidence base?
3. What do primary care guidelines say about the role of the family doctor? What do peak bodies (ie, advocacy groups) say about the role of the family doctor? Are these both in line with what is conveyed by current research?

**METHODS**

The complete methods were prospectively published in a protocol. Our search strategy included all literature published until September 2015. A preliminary search for existing scoping reviews did not find any with the same concept and topic (databases searched JBI SR, Cochrane Database of Systematic Reviews, CINAHL, PubMed, EPPi). Manuscripts were included when they involved adults (18+ years) with a body mass index (BMI) of greater than 25 (overweight or obesity), any involvement of a primary care doctor/physician, a primary care setting and inclusion of obesity management (online supplementary file 1). Contrary to our outlined protocol, we excluded papers in languages other than English, including those with an English abstract, as we could not perform data extraction adequately on these papers. In addition to this search strategy, we specifically sought relevant clinical guidelines from countries with strong involvement in the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (Australia, UK, USA, New Zealand, the Netherlands, Denmark, Finland, Estonia, Slovenia, Belgium, Spain and Portugal). We explored the family medicine college web sites from these countries and contacted the colleges via email when guidelines were not accessible.

This scoping review was purposefully restricted to obesity management of adults in primary care. As suggested in the Joanna Briggs Institute methodology, the scope has to take account of feasibility while maintaining a broad and comprehensive approach. By restricting the scoping review to obesity, we were able to extract more detail about the family doctor’s role than if we had included articles with a main focus on a specific non-communicable disease (eg, diabetes, heart disease). For this same reason, we did not include articles that were only describing nutrition care or physical activity advice unless they were specifically in relation to care of a patient with obesity. Due to the differences in the management of obesity in children and adolescents these population groups were not included in this review.

Two reviewers (EAS, NE) independently reviewed the abstracts, followed by the full papers, as described in the flow chart (figure 1). Our data extraction tool captured the author, country of intervention, year of publication, aim, term used to describe the primary care practitioner, methodology, type of involvement of the primary care doctor, skills needed by the doctor and whether the pillars of primary care were identified. Whole person care was judged as included if the paper described obesity management provided in the context of other health needs. Person-centredness was considered as incorporated when...
the patient’s values, beliefs, cultural needs or context of their community were discussed. First point of contact with the health system was part of all the interventions as ‘primary care’ was part of the search term. Elements of continuity of care were captured with data extracted about communication between any other types of providers and the family doctor. We did not complete a thematic analysis of the included papers.

We iteratively developed the data extraction tool based on the information we found in a first pass of all of the intervention papers. The role of the family doctor was extracted in line with clinical management processes in a primary care setting starting with anthropometric measurements, diagnosis, referrals, nutrition care, physical activity advice, as well as more intensive treatments such as medications and bariatric surgery. For the intervention articles, data specific to clinical trials were extracted such as recruitment and control or intervention involvement. A third reviewer (EH) reviewed the extraction data sheets and recommended additional details to be added and reviewed the guideline extraction in full.

Our scoping review of interventions involving family doctors in the management of obesity drew on the Template for Intervention Description and Replication (TIDieR) guidelines for the description of interventions. These guidelines outline the parts of interventions that need to be described in order for other practitioners to replicate the intervention, either for research or clinical practice. TIDieR was developed to standardise intervention description and support their implementation, which has been an undervalued aspect of health research.

Results were presented to stakeholders including patients, clinicians, primary health network representatives, chronic disease organisations and academics at three sessions (April 2015 preliminary results presented during a seminar in Canberra; March 2016 results presented to international academic audience in the Netherlands; June 2017 results presented at an academic meeting of clinicians and academics). The input from
We attempted to describe whether the pillars of primary care could be identified in the interventions as they were described. In 17 of the 77 interventions, the comprehensive, holistic care of the patient was described. In only these meetings was used to debate the justification for the review, the interpretation of the data extraction and the synthesis of the findings.

**RESULTS**

This scoping review uncovered 3294 non-duplicate citations, and after title and abstract screening 516 articles were reviewed in full. Up to 291 articles were excluded on full review for the reasons shown in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses diagram (figure 1). A total of 225 articles were included in the final review. The inter-rater agreement for the data extraction points exceeded 95% (62 points of disagreement out of 4992 data extraction points).

Using the focus of the three scoping questions, the following is a description of the literature that was reviewed.

### What supporting evidence (both primary and secondary) do we have for role family doctors play in obesity management for adults in primary care?

Of the 225 articles that were included in the review, 110 were about interventions in primary care. There were 77 different interventions described in these papers as some intervention were portrayed in multiple papers (tables 1 and 2). Fifty-seven per cent (44/77) of the interventions were carried out in the USA, with the remainder taking place in a variety of countries (table 1). Forty-eight per cent (37/77) of the interventions described were randomised controlled trials (RCT) (table 1). A majority of interventions on the management of adults with obesity stem from the USA, and RCTs are a common study design.

There were a total of 74 articles that were clinical overviews and opinion papers on the primary care management of obesity that included discussion of the role of the family doctor (table 3), and 25 papers that described current practice of family doctors in obesity management, usually through surveys or clinical audits (table 4). There were 16 international guidelines relevant to family doctors focused on the management of obesity (table 5).

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**Table 1 Number of different interventions identified in scoping review that describe a role for the family doctor in primary care obesity management—by country where the intervention was undertaken, and study design**

RCT, randomised controlled trial.

What is the role of the family doctor in managing obesity as a primary risk as supported by the evidence base?

The family doctor was involved in varying ways in obesity management depending on the type of article. The most common role for the family doctor across all types of articles was the diagnosis of obesity. The diagnosis was based on the BMI of the patient and waist circumference measurements were rarely taken. Family doctors were not often involved in intervention studies beyond diagnosis and referral into the trial. Papers about current practice, including audits and surveys, mentioned a lack of recognition and treatment of obesity by family doctors. Current overview and opinion papers often suggested a wide role including diagnosis, nutrition and physical activity counselling, and options for appropriate referrals. And there was great variation in the international guidelines with the family doctor not mentioned by some, to a broad role in others. Unsurprisingly, this varied depending on whether a primary care organisation had developed the guideline.

In all types of articles, the family doctor was frequently involved in the diagnosis of obesity (73/110 intervention papers, 69/74 overview papers, 22/24 current practice papers). They were involved in height and weight measurements in 111 out of 225 total papers, and overall waist circumference was infrequently mentioned in all articles (50/209 papers, not including guidelines).

We included all interventions relevant to the review, whether they were reported the family doctor’s role as part of an experimental intervention or in a control arm (table 2). In 45 of the 77 interventions, the family doctor was involved in recruiting patients to the trial. The family doctor only had a role in care delivery in 27 interventions (35%) in either the intervention or the control arm of a trial. Across all interventions, ‘standard care’ was used in 27 trials; however, it was only well described in 12 of these. In one case, the ‘primary care provider’ was used in the standard care arm but was ‘instructed not to provide specific behavioral strategies for changing eating and activity habits’.

We attempted to describe whether the pillars of primary care could be identified in the interventions as they were described. In 17 of the 77 interventions, the comprehensive, holistic care of the patient was described. In only...
### Table 2  Interventions in primary care in the management of adult obesity involving the general practitioner (over seven pages)

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<p>| Author             | Tsai et al&lt;sup&gt;108&lt;/sup&gt; | Wadden et al&lt;sup&gt;109&lt;/sup&gt; | Wilson et al&lt;sup&gt;110&lt;/sup&gt; | Wirth&lt;sup&gt;111&lt;/sup&gt; | Yardley et al&lt;sup&gt;112&lt;/sup&gt; | Tsai et al&lt;sup&gt;113&lt;/sup&gt; | Ryan et al&lt;sup&gt;114&lt;/sup&gt; | Ballarleon et al&lt;sup&gt;115&lt;/sup&gt; | Ballarleon et al&lt;sup&gt;116&lt;/sup&gt; | Katz et al&lt;sup&gt;117&lt;/sup&gt; | Buclin-Thébaud et al&lt;sup&gt;118&lt;/sup&gt; | Feuerstein et al&lt;sup&gt;119&lt;/sup&gt; |
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| <strong>Doctor–patient relationship</strong> |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Public health role</strong>          |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Prevention</strong>        |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Nutrition education | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Physical activity education | X                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Behaviour modification | X                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Counselling/psychology |                         |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Role modelling</strong>    |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Group-based interventions | X                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Medications          | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Bariatric surgery referral |                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Bariatric surgery work-up |                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Bariatric surgery after-care |                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Commercial weight loss programme referral |                  |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Bariatric equipment in consultation room |                  |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Standard care undefined |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Standard care was used | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Exact role uncertain | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Person-centredness | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Whole person care</strong> |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Name of intervention</strong> |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Number of papers</strong> |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Country              |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| Design               | RCT (protocol)           | RCT                       | RCT                      | Cohort study        | Single-arm trial            | Single-arm trial          | RCT                       | RCT                         | RCT                           |                               |                               |
| <strong>Recruitment into the trial</strong> |                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Coordination</strong>     | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Weight and height</strong> | X                        |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Waist circumference</strong> |                          |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>System level/implementation</strong> |                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
| <strong>Doctor–patient relationship</strong> |                      |                           |                          |                     |                             |                          |                          |                             |                               |                               |                               |
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NA, not applicable; RCT, randomised controlled trial.
Table 3  Clinical overviews and opinion articles on the role of the family doctor in the management of adult obesity in primary care (over seven pages)

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FP, family physician; GP, general practitioner.
### Table 4  Current practice articles on the role of the family doctor in the management of adult obesity in primary care (over three pages)

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<tr>
<th>Author</th>
<th>Gaglioti et al.</th>
<th>Morris and Gravelle</th>
<th>Hubert et al.</th>
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DISCUSSION

This scoping review synthesises the current literature on the role of the family doctor in the management of obesity in primary care. This comprehensive set of articles provides the research community with a resource for further study, for example, systematic reviews and meta-analyses based on different aspects of primary care management of adult obesity.

The family doctor is mostly used as a recruitment source in primary care interventions, the majority of which have been carried out in the USA. This is in contrast to guidelines, clinical overviews, and opinions that suggest a role for family doctors from diagnosis, to referral to allied health providers, and for further involvement in ongoing management.

Seven of the 16 guidelines specifically mentioned family doctors (or synonym), with one referring to ‘primary care providers’ (Table 5). Seven (44%) suggested the family doctor should provide nutrition and physical activity advice, and seven discussed the referral to allied health providers by the family doctor.

Seven of the interventions could be seen in the description could be person-centred. Overview and opinion articles generally reported that the family doctor should be involved in all stages of management from diagnosis, nutrition and physical activity counselling, and ongoing follow-up. Not surprisingly, papers that were mainly about pharmacological interventions or bariatric surgery were only about that area of management. Bariatric surgery papers described the family doctor as required for referral, but not work-up, and some described the family doctor’s role in ongoing management after surgery.

Overall, the family doctor was commonly involved in the diagnosis of obesity, and the under-recognition and intervention trials. Frequently, the role of the family doctor was noted in observational studies of current practice. It was difficult to identify the pillars of primary care practice in the description of interventions for adult obesity management.
### Table 5  International guidelines on the management of adult obesity in primary care, the role of the family doctor (FD) (over two pages)

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Country</th>
<th>Year</th>
<th>Intended for an FD audience?</th>
<th>FD mentioned</th>
<th>Primary healthcare mentioned</th>
<th>FD—measure the patient</th>
<th>FD—nutrition/physical activity advice</th>
<th>FD—behavioural supports</th>
<th>FD—frequency of visits mentioned</th>
<th>FD—advice on use of intensive treatments</th>
<th>FD—referral to allied health</th>
<th>FD—referral to specialist obesity services</th>
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<td>National Institute for Health and Care Excellence “Managing adults who are overweight or obese” 220</td>
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<td>Recommendations for prevention of weight gain and use of behavioural and pharmacological interventions to manage overweight and obesity in adults in primary care Canadian Task Force on Preventive Health Care 221</td>
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<td>Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia 222</td>
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<td>Guideline 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 224</td>
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Table 5 Continued

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<td>British Columbia Ministry of Health Services primary care providers have an important role in preventing and managing obesity through services offered to patients[^39]</td>
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[^29]: RACGP SNAP, Royal Australian College of General Practitioners “Smoking, Nutrition, Alcohol, Physical Activity”.
[^34]: X: Does not mention a specific role for FD.
[^40]: X: Does not mention a specific role for FD.
[^41]: X: Does not mention a specific role for FD.
[^42]: X: Does not mention a specific role for FD.
[^43]: X: Does not mention a specific role for FD.
offering lifestyle advice and behavioural support, and ongoing follow-up. Half of the articles that described current practice, mostly through clinical audits or surveys, reported that obesity was under-recognised by family doctors. There appears to be a misalignment between what commentators suggest as a role for the family doctor, and the current role they play in many primary care interventions.

The great majority of primary care interventions for adult obesity are being developed and tested in the USA healthcare setting. This has implications for the interpretation of the findings for translation into other contexts. For example, the USA does not have a ‘gatekeeper’ function for family doctors and patients are able to self-refer to tertiary services. Patients with health insurance also have different access to care compared with those who do not have. This may have ramification when translating an intervention to a context with universal healthcare access, such as the UK and Australia, and warrants further investigation.

We were also able to identify areas of concern for the publication of primary care research in obesity management. Twenty-seven of the interventions used standard care in the control arm, but standard care was poorly defined in 15 of these interventions. It is difficult to determine the relative effectiveness of new interventions in the management of obesity in primary care when they are compared with poorly defined standard care. More worryingly was the use of substandard care where family doctors were advised not to give lifestyle advice to patients. This suggests that usual care was artificially reduced in order to improve the apparent effectiveness of an intervention. This is a dubious practice from an ethical and scientific perspective and undermines the role of family doctors in obesity management.

**Implications for practice**

Guidelines are documents that are developed to assist practitioners in deciding on a course of action in a specific clinical circumstance and they often determine a standard of care. The obesity guidelines that were identified in this review had varying recommendations for the role of the family doctor. In some jurisdictions, including Australia, national guidelines do not often recommend that a specific profession must be responsible for a task, unless the task is limited to the scope of one profession alone. In contrast, in the Netherlands where the central role of family doctors is prescribed within the health system, family doctors are likely to have a foundational role in all guidelines that are produced. The role of guidelines and their development varies between nations and health systems and the centrality of the role of the family doctor in a guideline may reflect the strength of primary care in the specific healthcare system. Therefore, guidelines may not always be the definitive source for determining the clinical scope and responsibilities of specific professional groups such as family doctors in obesity care.

**Implications for research**

Poor descriptions of interventions could have been aided by adherence to the TIDieR guidelines. Specifically, the TIDieR guidelines suggest the health professionals involved in an intervention should be described in terms of their professional background, their expertise and any specific training given. The terms used to describe a family doctor were diverse in the intervention papers and ranged from primary care physician, primary care provider, family physician or general practitioner. The range of terms that are used in the primary care literature makes it impossible to understand the qualifications of professionals involved in the interventions. Trials from the USA often use ‘primary care providers’ or ‘primary care practitioners’, nebulous terms that could include a variety of professionals with vastly different training. This is particularly problematic when international primary care teams attempt to translate interventions to their local context. An international taxonomy for describing family doctors could assist in solving this issue.

The primary care literature has thoroughly described the fundamental factors that make primary care effective. However, it was challenging for reviewers to determine if interventions were inclusive of the principles of person-centredness and whole person care. Knowing that first point of contact, whole person, coordinated, person-centred, continuous care, is important in primary care; it would be helpful for primary care interventions to explicitly consider these factors in their design. Additionally, the specific reporting of these factors in primary care trials would be helpful in publications to improve the understanding of how and why primary care interventions work. It is perhaps important that primary care determines a specific set of reporting requirements for primary care research that could be added to the TIDieR checklist.

**Limitations**

This scoping review is limited to the context of obesity management in primary care. Articles that reported on other important and related topics like nutrition, lifestyle change or cardiovascular health were not included. We chose to limit the review to obesity as we were interested in this specific literature and wanted to maintain the depth of our data extraction while maintaining feasibility. The review was also limited to publications in the English language and this may have missed work that included family doctors in non-English speaking healthcare settings. We may have missed international guidelines that were not picked up in our search strategy. As expected in a scoping review, articles were not assessed for quality or the specific outcomes of reported trials. Further work would have to be done from the identified literature and this could include a thematic analysis. The aim of the scoping review is to widely and broadly search the literature to identify gaps and inconsistencies, and provide a platform for further systematic work.
CONCLUSION
There appears to be a disconnect between how family doctors are involved in primary care interventions, the message that is found in academic literature and the apparent role of the family doctor in current practice. Guidelines that are developed by national bodies are not necessarily the definitive source of information for the discrete role of specific health professionals. Improvement is required in the reporting of primary care interventions, particularly in the professional background of those involved in the trial and the acknowledgement of the pillars of primary care in intervention development. This foundation work provides a platform for further interpretation of existing literature on the role of the family doctor in obesity management.

Twitter @LouSturgiss

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Contributors EAS, NE, EH, CvW and KAD were part of the development and publication of the protocol. EAS and NE were involved in the search and data extraction. EH was the third author to check the data extraction tool. EAS and NE did the initial analysis and synthesis. EAS and NE presented the findings of the scoping review at the stakeholder sessions. EAS wrote the first draft of the manuscript. EAS, NE, EH, CvW and KAD then contributed to the writing of the manuscript and approved the final version.

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Patient consent Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement Further data about the studies that were excluded from the scoping review are available by request from the authors. All data regarding included studies are included in this paper and no additional data on these studies are available.

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