Journal of Community Medicine & Health Education

van den Brekel et al., J Community Med Health Educ 2016, 6:6
DOI: 10.4172/2161-0711.1000486

Research Article OMICS International

General Practitioners' Perceptions with Regard to their Role in a Multidisciplinary Approach of Childhood Overweight

van den Brekel K[1*], Bakker J[1], Rutten GEHM[2] and Vos RC[2]

[1]*Leidsche Rijn Julius Health Centers, Utrecht, The Netherlands*

[2]*Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, The Netherlands*

[*]**Corresponding author**: Karolien van den Brekel, MD, PhD, Leidsche Rijn Julius Health Centers, Utrecht, The Netherlands, Tel: 030-6866100; E-mail: KvandenBrekel@lrjg.nl

Received date: November 03, 2016; **Accepted date:** November 21, 2016; **Published date:** November 25, 2016

Abstract

Background: Childhood overweight and obesity are a worldwide problem. In Utrecht, the Netherlands a pilot for a multidisciplinary approach with a coordinating healthcare provider will be implemented. Before the pilot starts, the opinions of the general practitioners in the pilot area will be studied, because their collaboration is important.

Aim: To obtain insight in the perceptions of general practitioners (GPs) with regard to their role in a multidisciplinary approach of childhood overweight.

Design and Setting: Survey; 36 GPs, selected by convenience sampling from two districts in Utrecht.

Methods: Mixed methods; self-developed questionnaires based on face validity and semi-structured interviews with GPs were conducted about their role in a multidisciplinary approach. Descriptive statistics were used to analyse data collected by the questionnaire.

Results: Twenty-nine (81%) of the GPs filled in the questionnaire, 65% of them often observe overweight and obesity in children. Barriers to discuss childhood overweight were: lack of time, reluctance to raise the subject and lack of awareness by parents. Experienced barriers in treatment were: lack of motivation of the children and parents and lack of a structured treatment plan. Within the multidisciplinary approach, the interdisciplinary communication was mentioned; 83% of the GPs would like to be informed after the first and 100% after completion of treatment from other healthcare professionals.

Conclusion: GPs signalize childhood overweight frequently, but perceive barriers in discussing childhood overweight and obesity. In the multidisciplinary approach of childhood overweight, a structured treatment plan from the coordinating health care provider and optimized interdisciplinary communication are needed for better implementation.

Keywords: Pediatric obesity; Primary health care; Prevention

How it Fits in

- It is well known that GPs experience barriers in managing childhood overweight and obesity.
- Recently a multidisciplinary approach with a coordinating health care provider has been advocated. Such an approach requests the collaboration of GPs.
- In the current study GPs state that a multidisciplinary approach with a coordinating youth health care provider is important, although better follow-up and treatment plans and good interdisciplinary communication are needed so the GP can discuss the childhood obesity with child and parents more frequently.
- The GP's stated that they feel mainly responsible for observing and discussing the child's overweight or obesity but less for treatment.

Introduction

It is expected that by 2025, 70 million children and adolescents will be overweight or obese [1]. In the Netherlands, a two to three fold increase in overweight and a four to six fold increase in obesity in children is currently seen compared to the 1980s [2]. However, in the major cities, this increase stabilised over the past few years, which might be the result of more attention for prevention and intervention programs in these cities [2,3].

Childhood overweight and obesity has major consequences in all stages of life; it is associated with co-morbidities such as glucose intolerance, diabetes, metabolic syndrome and other cardiovascular risks factors at young adulthood [4-11]. Besides somatic complications, it can also have a socio-psychological impact, the quality of life in obese children is similar to the impaired quality of life in children diagnosed with cancer [12]. Besides, it is associated with depression and worse social and mental coping throughout adolescence [13,14].

During the last decade, several (inter)national studies have been published on the role of general practitioners (GPs) in the prevention

and treatment of childhood obesity, with contradicting findings [15-24]. GPs in Australia see a large role for themselves in weight management in childhood overweight and obesity [17], those in the UK only see a responsibility to raise the topic and provide basic lifestyle advise [18,19]. Concerns with regard to a possible adverse effect on the relationship with the patient, lack of time and scepticism about intervention results are experienced barriers in this respect [19]. Also a lack of patient motivation and low priority to discuss the overweight/obesity - since primary care physicians feel not competent enough to treat it - are mentioned as barriers to raise the topic during a consultation for another health problem [16,17,21]. Raising the topic of overweight and obesity in children is not only difficult for GPs, but likewise for parents; both parties prefer the other to raise the subject [15]. Parents also prefer the GP to discuss a follow-up plan for the child's overweight [18].

GPs in the Netherlands are of opinion that the youth health care physician should play a more prominent role in the tackling of childhood overweight and obesity [22], in line with Dutch guidelines on overweight and (severe) childhood obesity in which a multidisciplinary approach with a coordinating health care provider is recommended [25,26]. We aimed to get more insight into the opinions of GPs with regard to their role in a multidisciplinary approach, with a coordinating health care provider from the youth health (JGZ), before implementing such an approach.

Method

First we describe the results of a survey on the GPs' perceptions with respect to signalling and discussing childhood overweight and obesity, the use of guidelines, as well as treatment and cooperation with other health care workers, collected by questionnaires (self-designed, items based on face validity). The second part of the study describes perceived barriers and facilitators in the treatment of childhood overweight and obesity in the current situation as well as GPs' views on a multidisciplinary approach with a coordinating health care provider. For the latter part, semi-structured interviews designed following the COREQ consolidated criteria [27] were held.

Setting and participants

In two demographically different districts in Utrecht, the Netherlands, the multidisciplinary approach with a coordinating health care provider from JGZ for four to twelve year old children with overweight or obesity, will be implemented. One district (Kanaleneiland) is an urban neighbourhood with lower social economic status with a 25% prevalence of childhood overweight and 7% obesity [28]. The other district, Leidsche Rijn, is comparable to most Dutch newly developed suburbs with a 10% prevalence of childhood overweight and 2% overweight between 9 and 11 years [29]. Convenience sampling was used for the current study; an email with a web link to an online questionnaire was sent to all GPs in both districts. In addition, a paper version of the questionnaire was made available for GP's who did not reply to the online questionnaire, which was handed out during GP meetings to non-responders. All participating GPs work in multidisciplinary health centres with several GPs. In both districts one to three GPs per general practice were approached, their practice managers assigned the GPs for the interviews (n=14).

Measures

Questionnaire

A fourteen-item questionnaire was developed based on different Dutch guidelines for childhood overweight and obesity [30,31]. There was no gold standard available to compare the items with. For that reason the items of the questionnaire were based on face validity. The items were chosen by the researchers (two experienced general practitioners, one medical student and one epidemiologist-public health researcher). Four items related to signalling and raising the topic of overweight and obesity by the GP, six to diagnosis and reporting of findings, two items regarded the treatment of overweight and obesity and four about the interdisciplinary communication among professionals. Answer options were on a five-point Likert scale, yes/no items and several options items.

Semi-structured interviews

Data on perceived facilitators and barriers in signalling, raising the topic, diagnosis, treatment and interdisciplinary communication, were collected by semi-structured interviews. Also the GPs' perception with regard to their role in a multidisciplinary approach with a coordinating health care provider was asked. For this method was chosen to address specific topics important in de national discussion on the treatment of childhood obesity, but not to determine the direction of the discussion within each topic. The interviews were conducted face-to-face or by phone, depending on the GP's preference, by one of the authors (JB), after a short training.

Data analysis

The data collected by the questionnaire were analysed using IBM SPSS version 20.0 Descriptive statistics were used.

All interviews were recorded for transcription in a summary in the same order of topics, but not analysed with specific software, due to the scope of the pilot. The summaries of the interviews were not verified with the participants, but compared with the results of the questionnaire, so different methods were used to get more insight in the opinions of the GPs. Counts with percentages of answers and quotes are presented.

Results

The questionnaire was completed by 29 of 36 approached GPs (81%); 89% (8/9) from Kanaleneiland (KE) and 21/27 (78%) from Leidsche Rijn (LR). The GP's who not attended the meeting were the non-responders. The questionnaire was answered by 80% female GP's, responders had an average of 11.1 ± 7.6 years experience as GP and 6.5 ± 5.5 years working in the current district. Of the participating GP's who were interviewed 70% was female, with 12.9 ± 9.0 years in this profession and 8.8 ± 6.9 years in current district, without significant difference among the two districts. The gender distribution of GP's in both districts is representative.

The average duration of the interview was between 20 and 25 minutes. Eight of the fourteen interviews were conducted by telephone (six in Kanaleneiland, two in Leidsche Rijn). Results are presented by topic.

	Kanaleneiland (%)(N=8)	Leidsche Rijn (%) (N=21)	Total (%) (N=29)
Signalling			
How often do parents or children come to the GP for overweight or obesity as main consultation reason?			
Rarely	62.5	57	59
Sometimes	37.5	38	38
Often	0	5	3
How often do you signalise childhood overweight or obesity during consultations?			
Rarely	0	10	7
Sometimes	37.5	24	28
Often	62.5	66	65
How often do you discuss the topic of childhood overweight or obesity if that is not the reason for consultation?			
Rarely	12.5	33	28
Sometimes	12.5	43	34
Often	75	24	38
Would raise the topic sooner in obese children then in overweighed children? (yes)	100	86	90
Diagnostics and reporting			
Do you use a guideline in the care for childhood overweight or obesity? (yes)	37.5	33	34
If yes, which guideline do you use?*			
NHG standard obesity (30)	37.5	29	31
healthcare obesity PON (26)	0	5	3
Addendum extreme obesity healthcare standard obesity PON	0	0	0
Flow chart Covenant multidisciplinary approach for childhood overweight Utrecht	37.5	0	10
And how frequent do you use the guideline?			
Rarely	25	5	10
Sometimes	0	14	10
Often	12.5	15	13
Which data do you report in the patients' medical chart in case of childhood overweight or obesity?*			
Length	75	91	86
Weight	100	91	93
BMI	62.5	76	72
Abdominal circumference	12.5	5	7
Weight related health risk	12.5	10	10
Conclusion (overweight/ grade I, II, III obesity)	12.5	24	21
BMI and conclusion (overweight/ grade I, II, III obesity)	37.5	24	28
Other	0	10	7

Do you know the amount of the combined health and behavioural lifestyle interventions in your district? (yes)	62.5	48	52
Are you satisfied of the communication between health care providers involved in the care for childhood overweight and obesity? **			
Unsatisfied	14	24	22
Neutral	42	62	57
Satisfied	42	14	21
How often do you receive information from other healthcare workers after you referred a patient? **			
Rarely	29	33	32
Sometimes	42	29	32
Often	29	38	36
Do you wish to receive more or less frequent information? **			
Less frequent	0	0	0
Neutral	57	48	50
More frequent	43	52	50
At which moments do you wish to receive information from other health care providers regarding the progress of the treatment of childhood overweight and obesity?*			
After the first consultation, with treatment plan	87.5	81	83
In between with results of the treatment	25	30	35
After completion of termination of the treatment by therapist or parents or child	100	100	100
When a child does not show up at consultations	87.5	67	72
Never	0	0	0

Table 1: Results of the questionnaire.

Signalling

From the participating GPs 65% observed overweight and obesity in children often, although it is seldom the patient's reason for encounter. When overweight is observed, discussing it with the child and parents (if the overweight was not the reason for consultation) occurs less often, namely in 38% of the cases, (KE 75%; LR 24%). According to the GPs, they discuss obesity in 90% of the times (Table 1).

The results of the semi-structured interviews showed that the GPs agree that they are (partly) responsible for observing and discussing childhood overweight and obesity, but that they also consider this a responsibility for the parents to do so.

GPs mentioned that children's complaints, their own knowledge of the impact of overweight and obesity on the child, their knowledge that early treatment has better results on weight management and sustainable healthy lifestyle facilitate signalling overweight and obesity in children. Experienced barriers were a lack of time for proper discussion, the possible negative influence on the relation with the patient, difficult subject to discuss and the fact that parents do not perceive overweight as a health problem (Box 1).

Facilitators	
Compain relateld to overweight	"If there is a link with the current complaints it is easier to discuss and if there is no link, it is often difficult to raise"
Health problem	"Oh well, my motivation is, that in my opinion, overweight is a health problem."
Early treatment	"Because you know if there is no early tackling of the problem, it keeps getting harder later on in life to tackle the problem."
Severe obesity	"Well, when I'm convinced it is severe obesity. You know, when I don't think it's still baby fat or something."

Barriers	
Lack of time	"Because I think if you address the topic, you should discuss it. I don't think that you can address it just like that. So yes that makes, that for me, time is a huge factor."
Doctor patient relation	"Yes, if you think it brings up resistance, it's better not to discuss because you won't achieve what you want."
No awareness	"Yes in general parents are okay with it, and one time I had a parent who rejected it all and one time I had someone who rejected it all greatly and downplayed it."
Delicate topic	"Yeah, you know, if I am convinced it hurts the child."

Box 1: Quotes regarding signalling and discussing the topic of childhood overweight and obesity.

Diagnosing and reporting

In Table 1 and Box 2 the results and quotes with facilitators and barriers in diagnosing obesity are described. One third of the included GPs reported to use one of the available Dutch guidelines for childhood obesity. Although 93% of the GPs measure and report weight, only 21% of them report the grade of obesity in the medical record as suggested by the guidelines [26,30,31]. In the interviews some GP's mentioned that in severe obesity they perform additional biomedical testing (glucose, and sometimes thyroid function), other GP's don't perform additional blood tests for diagnosing, because in the majority of cases there is a lifestyle problem.

Treatment and multidisciplinary approach

Only half of the GPs were familiar with combined behavioural lifestyle programs for children with overweight or obesity in their own district (KE 63%, LR 48%). During the semi-structured interviews, (Box 3, Box 4) most GPs stated that they feel mainly responsible for observing and discussing the child's overweight or obesity but less for treatment, mainly due to lack of time. Other healthcare providers such as dieticians and physiotherapists were considered to have a larger role in this respect. Some GPs mentioned psychologists as well to play a larger role in the treatment, but most of them prefer a multidisciplinary approach.

Facilitators	
Guidelines	"Then I have to calculate? The grade of overweight and then I have to check the glucose. I always look in the NHG guideline, if and what additional test I must perform."
Discrepancy in anamnesis	"Well I would do it when there are serious problems and also if there is a discrepancy between what a child eats and sports and the overweight, if that is not compatible."
Alert parents	"So if there is very severe obesity and I suspect an underlying disease as a cause for the obesity. I would check for thyroid problems or perhaps new onset diabetes. But also to give the parent the impression overweight is a serious condition."
No results treatment	"Or when they come back after treatment at the dietician and has already started with lifestyle changes for a period and there is no success at all. That is also often a question from the dietician."
Barriers	
No additional value	"I think that you simply do not need additional testing, because in the majority of cases there is a lifestyle problem."
External factor	"I often fear that if something is found due to additional testing, that it is for the parents directly the cause why that child has overweight. And a very good reason not to change lifestyle which actually should be changed as well."

Box 2: Quotes of facilitators and barriers in diagnostics and additional testing.

Mentioned facilitators for the treatment of childhood obesity were: a good communication between healthcare providers in the multidisciplinary team, especially with regard to the follow up and structured treatment plan and a coordinating health care provider to guard and motivate patients and to prevent dropout. In the GP's opinion, motivated and involved parents also facilitate the tackling of childhood overweight and obesity. Disappointing treatment results were often seen if motivation of children and parents is lacking and in case of parental overweight. Also the costs for sport facilities or healthy food were mentioned as barriers. The multidisciplinary project in the Netherlands is only organized as a pilot, due to financial restrictions, and is only planned for one year, this is too short according to most GPs. Therefore, some GPs were sceptic about a multidisciplinary approach with duration of one year, and they advocated prolonging the follow-up time for more sustainable results.

Facilitators	
Short lines	"Well, here the lines between caregivers are short. So there is the way to call if you are really concerned."
Time	"That I can refer to someone who can guide them. Guide them in a way of having more time of course."
Motivation	"Well, apparently there are some parents motivated enough to ensure that it is a success."

Multidisciplinary approach	"I refer people regularly to a dietician, I have the idea that a dietician alone is not enough, though I do think that it is good that a dietician makes people aware of how many calories and they consume and the composition of their food."
Barriers	
Poor communication	"And children visit me after a while….? And they say we did it last year, but it did not really help. I get that information from the patients a year after."
Motivation and awareness	"Often parents themselves also are obese. They will perhaps be inclined to acknowledge it as a problem, because then they must also work to their own problem."
Resources	"Then, certainly is our population in context of their social class, limited financial resource is a reason not to follow the offered treatment options. And then you can say you have to go to the dietician but you actually know they won't go."
Treating whole families	"Yes it is often the dietary habits of the whole family. You will see that the whole family often has overweight. Therefore, you want parents to be involved in the treatment. After all, they do the groceries for the whole family."
Duration treatment	"And often you will see that children after they have followed a course, they have the same problems again the year after. These projects are only for one year, maybe for two years but not for the long term."
Missing structure	"Well, I think in particular that cooperation and early detection, now is quite ad hoc. Not really very organized."

Box 3: Quotes regarding the treatment of overweight and obesity.

Communication	
	"You would actually expect feedback when the treatment stops. Those working in healthcare notice when the children dropout, or got lost for follow-up."
	"There is almost no other health care provider that consistent provides the GP feedback. Whether it is the paediatrician, lifestyle programmes or dieticians. I would just want to have consistent feedback."
Multidisciplinary approach	
Structure	"But in my opinion it is most important that all parties look in the same direction. And if we all want the same, the greater the chances our plan gets support."
Personal plan treatment	"Well when I see a child very short for something else, but they help the child specific with this problem."
Central healthcare provider	"So I think a coordinating health care provider is a pro for keeping an eye on the patient and also for motivating and give insight in the urgency of treatment." "Because as general practitioner you are a central person in healthcare and that function needs to be preserved. The youth health care system should not pass the general practitioner on the left or on the right. Even though they want that very much, they are experts on their own field, but there are so many factors of influence."
Earlier projects failed	"Well yes, I'm a bit critical, I know the government implemented a lot of these programs and until now the results are very disappointing."
Duration pilot	"You know, you helped someone on the right track, but what about it after half a year or one year? That is a concern, maybe the general practitioner can have a role after that time."
Medicalization	"That the problem is being medicalized. For the child it is difficult that the accentuation is on the child's weight. But that also depends on the way you communicate it I suppose…"

Box 4: Quotes regarding communication and multidisciplinary approach.

Discussion

Summary

This study demonstrates that GPs are likely to perceive a responsibility for signalling and discussing childhood overweight and obesity during their consultation hours. They prefer a multidisciplinary approach with a coordinating health care provider, and are less motivated to treat the child's overweight themself. Until now, the GPs experience a lack of a structural treatment plan with sufficient duration and poor interdisciplinary communication.

Comparison with existing literature

These results are in agreement with previous findings in which it was shown that discussing childhood overweight and obesity is difficult for GPs [15,19-24]. In general, GPs in areas with a high prevalence of obesity find it less difficult to discuss the child's excess

weight than their colleagues in a region with a lower overweight prevalence. Reasons for GPs not to discuss the child's overweight are not country specific, and include lack of time or experienced competence for proper discussion and possible negative consequences for the relationship with the parents [19-24]. The lack of knowledge and perception of the problem of overweight is in accordance with the results of a systematic review on this topic, showing that half of the parents are not able to identify their child as being overweight [16]. This is important to know for the health care providers, as it indicates that they need to make parents more aware of their child's obesity. Possibly increased GPs' awareness and knowledge of obesity might result in improved identification and discussion of weight problems with less fear of harming the relationship [22,32].

GPs seem to use obesity guidelines rarely, which is comparable to the use of guidelines on obesity in other countries [15,16].

Strengths and limitations

The strength of our study is the diversity of the two included districts, which are more or less representative for other more urban neighbourhoods with lower social economic status and for newly developed suburbs in the Netherlands. Our mixed methods design provides more insight into facilitators and barriers for a multidisciplinary approach. The critical problem is not the creation of an integrated health care standard, but the creation of support systems for its implementation at the level of primary health care [33]. The fact that the same barriers have been identified in previous research highlights the need to take them into consideration for creating support among GPs. So although for the current study convenience sampling was used, with the disadvantage that the more critical GPs might be underrepresented or GPs who are more involved in the treatment of childhood obesity might be overrepresented. By interpreting the results of the current study some limitations have to be taken into account. First, the used questionnaire was self-developed and items based on face validity. On the other hand the questionnaire was especially developed for the purpose of implementation of the upcoming multidisciplinary approach and no gold standard to compare our items with was available. Second, the number of participants was low and based on convenience sampling, although all GPs from the pilot area were approached of whom 80% responded. In qualitative research, sample size is determined by the point of saturation [34]. However, based on this way of sampling we cannot confirm saturation of the sample or under-or overrepresentation of opinions. This indicates that possibly not all aspects of the phenomenon have got a chance, especially those aspects that are initially less obvious. However, for the purpose of the pilot-insight in opinions of GP in the areas were the new approach will be implemented in a short period of time-convenience sampling was appropriate. Third, for the survey both online as well as printed questionnaire were used for those not responding to the online version during a monthly meeting. The GP's who not attended the meeting were the non-responders. This might have given a bias. Last, due to the selection procedure of the managers of the GPs to interview, it cannot be excluded that mainly GPs with an interest in childhood overweight or obesity were selected. We cannot speculate as to the way in which this might have influenced the results of the study. It is possible that GPs with less interest have other perceptions on their role in a multidisciplinary approach for childhood overweight. Although, it is not likely that this would have given major changes in quotes and results.

Implications for Research and/or Practice

In concluding, the results of the current research showed that most GP's perceive themselves responsible in signalling and discussing childhood overweight and obesity, and less in treating it. Agreement on task description from the different professionals in the multidisciplinary approach will support optimal implementation with a coordinating health care provider from the youth health (JGZ) who is responsible for interdisciplinary communication. These findings can be used during the implementation of the multidisciplinary approach for childhood overweight and obesity. However, since we cannot confirm saturation of the sample size, conclusions should be interpreted carefully by the implementation of a similar multidisciplinary approach in other cities and countries with comparable conditions and health care systems.

Acknowledgements

We thank all participating general practitioners for their contribution in answering the questionnaires and interviews. KvdB (general practitioner) and JB (last year medical student) were the principal investigators of the study with regards to the data collection and data analyses and performed the main writing together with all authors. RV contributed to the data analyses. All authors reviewed the manuscript and vouch for the accuracy and completeness of the data and analyses. This pilot study with regard to the role of the GP, was part of the multidisciplinary approach for childhood obesity, with a coordinating healthcare provider from Youth Health (JGZ) and was supported by the Utrecht Municipality. There is no conflict of interest.

References

1. World Health Organization (2015) Interim report of the commission on ending childhood obesity.
2. Schönbeck Y, Talma H, von Dommelen P, Bakker B, Buitendijk SE, et al. (2011) Increase in prevalence of overweight in dutch children and adolescents: A comparison of nationwide growth studies in 1980, 1997 and 2009. PLoS One 6: e27608.
3. Leenaars K, Jacobs-van der Bruggen M, Renders C (2013) Determinants of successful public-private partnerships in the context of overweight prevention in Dutch youth. Prev Chronic Dis 10: E117.
4. Renders CM (2004) Overweight and obesity in children and adolescents and preventive measures. Ned Tijdschr Geneeskd 148: 2066-2070.
5. Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH (1997) Predicting obesity in young adulthood from childhood and parental obesity. N Engl J Med 337: 869-873.
6. Singh AS, Mulder C, Twisk JWR, Van Mechelen W, Chinapaw MJM (2008) Tracking of childhood overweight into adulthood: A systematic review of the literature. Obes Rev 9: 474-488.
7. Baan-Slootweg OH, Nollet MN, Weller FR, Benninga MA, Aalderen WMC (2011) Severe childhood obesity: a question of weight. Tijdschr Kindergeneeskd 78: 98-103.
8. Peeters A, Barendregt JJ, Willekes F, Mackebach JP, Mamun AAl, et al. (2003) Article Obesity in Adulthood and Its Consequences for Life Expectancy: A Life-Table Analysis. Ann Intern Med 138: 24-32.
9. Bell LM, Curran JA, Byrne S, Roby H, Suriano K, et al. (2011) High incidence of obesity co-morbidities in young children: A cross-sectional study. J Paediatr Child Health 47: 911-917.
10. McMullen S (2014) Childhood obesity: the impact on long-term risk of metabolic and CVD is not necessarily inevitable. Proc Nutr Soc 73: 389-396.
11. Armstrong KR, Cote AT, Devlin AM, Harris KC (2014) Childhood Obesity, Arterial Stiffness, and Prevalence and Treatment of Hypertension. Curr Treat Options Cardiovasc Med 16: 339.

12. Schwimmer JB, Burwinkle TM, Varni JW (2003) Health-related quality of life of severely obese children and adolescents. JAMA 289: 1813-1819.
13. Sanders RH, Han A, Baker JS, Cobley S (2015) Childhood obesity and its physical and psychological co-morbidities: a systematic review of Australian children and adolescents. Eur J Pediatr 174: 715-746.
14. Sjöberg RL, Nilsson KW, Leppert J (2005) Obesity, shame, and depression in school-aged children: a population-based study. Pediatrics 116: e389-e392.
15. Jones KM, Dixon ME, Dixon JB (2013) GPs, families and children's perceptions of childhood obesity. Obes Res Clin Pract 8 :e140-148.
16. Van Gerwen M, Franc C, Rosman S, Le Vaillant M, Pelletier-Fleury N (2009) Primary care physicians' knowledge, attitudes, beliefs and practices regarding childhood obesity: A systematic review: Obesity Review Obes Rev 10: 227-236.
17. Buffart LM, Allman-Farinelli M, King LA, van der Ploeg HP, Smith BJ, et al. (2008) Are general practitioners ready and willing to tackle obesity management? Obes Res Clin Pract 2: 189-194.
18. Gage H, Erdal E, Saigal P, Qiao Y, Williams P, et al. (2012) Recognition and management of overweight and obese children: A questionnaire survey of general practitioners and parents in England. J Paediatr Child Health 48: 146-152.
19. Walker O, Strong M, Atchinson R, Saunders J, Abbott J (2007) A qualitative study of primary care clinicians' views of treating childhood obesity. BMC Fam Pract 8: 50.
20. Derksen RE, Melis WJB-, Renders CM, Seidell JC, Visscher TLS (2010) Prevention and Treatment of Overweight and Obesity in Zwolle - Children. Zwolle.
21. Hansson LM, Rasmussen F, Ahlstrom GI (2011) General practitioners' and district nurses' conceptions of the encounter with obese patients in primary health care. BMC Fam Pract 12: 7.
22. Paulis WD, de Jong A, van Avendonk M, Boukes F, van der Wouden JC (2012) Obese children in general practice online survey among GPs. Tijdschrift voor Sociale Geneeskunde 90: 171-175.
23. Schalkwijk AAH, Bot SDM, de Vries L, Westerman MJ, Nijpels G, et al. (2015) Perspectives of obese children and their parents on lifestyle behavior change: a qualitative study. Int J Behav Nutr Phys Act 12: 102.
24. Schalkwijk AAH, Nijpels G, Bot SDM, Elders PJ (2016) Health care providers' perceived barriers to and need for the implementation of a national integrated health care standard on childhood obesity in the Netherlands – a mixed methods approach. BMC Health Services Research 16: 83.
25. Partnerschap Overgewicht Nederland (2010) Zorgstandaard Obesitas. Amsterdam.
26. Halberstadt J, Seidell JC (2012) Addendum serious childhood obesity in the Obesity Care Standard. Integrated care for children with extremely elevated weight-related health risks and their parents. Amsterdam.
27. Tong A, Sainsbury P, Craig J (2007) Consolidated criteria for reporting qualitative research (Coreq): a 32-item checklist for interviews and focus groups. Int J Qual Health Care 19: 349-357.
28. Volksgezondheidsmonitor Utrecht (VMU) (2014) Utrecht Youth Health District West.
29. Volksgezondheidsmonitor Utrecht (VMU) (2014) Youth health Utrecht Leidsche Rijn. Utrecht.
30. Van Binsbergen JJ, Langens FNM, Dapper ALM, Van Halteren MMG, Glijsteen R, et al. (2010) NHG-Standaard Obesity. Huisarts Wet 53: 609-625.
31. Kist-van Holthe JE, Beltman M, Bulk-Bunschoten AMW, L'Hoir M, Kuijpers T, et al. (2012) YHC guideline Obesity: the prevention, detection, intervention and referral of children between 0-19 years. Utrecht 44: 62-68.
32. Parry LL, Netuveli G, Parry J, Saxena S (2008) A systematic review of parental perception of overweight status in children. J Ambul Care Manage 31: 253-268.
33. Gunther S, Guo F, Sinfield P, Rogers S, Baker R (2012) Barriers and enablers to managing obesity in general practice: a practical approach for use in implementation activities. Qual Prim Care 20: 93-103.
34. Leeuwen M van, Putten MH-van, Woudenberg A van (2015) Positioning central role in health care child obesity. Zutphen/Baambrugge.