Author’s response to reviews

Title: Does additional support provided through e-mail or SMS in a Web-based Social Marketing program improve children's food consumption? A Randomized Controlled Trial

Authors:

Natalie Rangelov (natalie.rangelov@gmail.com)

Sara Della Bella (sara.della.bella@usi.ch)

Pedro Marques-Vidal (Pedro-Manuel.Marques-Vidal@chuv.ch)

L. Suzanne Suggs (suzanne.suggs@usi.ch)

Version: 4 Date: 24 Jan 2018

Author’s response to reviews:

Answers to the associate Editor:

Thank you for re-submitting your article and for addressing the comments of the reviewers. I'd like to explain the current decision of "minor revisions", which, if addressed, will be the final step before taking a final decision on this manuscript (which we envisage will be quick).

The journal's administration has forwarded me your note, and I fully understand why confusion arose as to why the manuscript was with the reviewers again. Upon receiving your earlier revision with the response to the reviewers, the editorial board decided that registration of the trial was needed before we could invite the same reviewers again to re-review your article. Unfortunately, our decision resulted in a human administrative error, and staff erroneously selected "minor revisions" instead of the intended "revise before peer-review"; and a default text was appended that suggested that the peer-reviewers had approved this. We apologise that this gave you the impression that your response to the reviewers had already been seen by them, while this was not the case. The journal staff is currently reviewing this to optimize processes.

After receiving the updated version after trial registration, we sent the manuscript out to the same reviewers as before immediately. However, as the original reviewers were unavailable at this moment in time, we had to seek an alternative reviewer as per journal policy. Please find the comments of this reviewer below, which mostly refers to the updated text.
I'll ensure that we look at your next version as soon as possible upon receipt to ensure a brief short turn-around (please make sure to highlight any changes made in the manuscript to help us do so).

As we are aware of your deadline for payment of Open Access fees by the end of this month, we have currently queried whether and how this part of the process can be expedited. Please don't hesitate to contact me, should you have any queries. I'll also keep you updated.

Thank you very much for your explanation, now it is much more clear. Thank you also for your understanding of the current situation, and for expediting the process. We highlighted in light blue the edits based on the feedback from reviewer 3.

Answer to reviewer #3:

The topic is interesting and is definitely worthwhile of investigation. I think that web-based interventions are necessary for the future, especially since people spend a lot of time on technology, and this is a potentially accessible way of reaching parents. I do have some concerns however, which I have mentioned below.

1. Abstract

* In your conclusion of your abstract and of your discussion you state that there is no one size fits all answer. However, your results suggest that Email did not provide any (significant) additional benefits over the web, regardless of food groups targeted. So this should be rephrased to suggest that the web-based improved consumption of x,y,z, and the addition of sms resulted in a positive change for veg, but email did not influence behaviour.

We deleted the final sentence, and kept the text were we state that web improved consumption of water, fruit, soft drinks and sweets, that the addition of SMS resulted in a positive change for vegetables, and that the use of e-mail in addition to Web did not result in any significant difference.
2. Introduction

* Why is it important that this is the first study to look at children from this specific area? How do they differ from other areas? As you state in your introduction, among the adult population of Switzerland, only 19% of men and women consume their 5 a day. So you need to make clear why this specific region is important.

In the background we added data about Ticino children, showing that adherence to nutritional guidelines is lower than in Switzerland, and that overweight and obesity rates are higher compared to other Swiss regions.

“Swiss children also do not adhere to the recommended guidelines with about 55% of girls and 40% of boys eating fruits and vegetables daily [4]. A study conducted in Canton Ticino, one of the 26 States in Switzerland, showed that less than 50% of the children were adherent to the national dietary guidelines [5]. Looking at fruit consumption, only 10.4% of children adhered to the recommendations. No child consumed the recommended amount of vegetables, and only 9.5% adhered to the guidelines for soft drinks, sweets and salty snacks (the others over-consumed those foods). Children in Ticino are also over-consumers of meat (72.7%) [5]. Further, Swiss data also show high rates of overweight and obesity: more than 40% of adults and roughly 20% of children are overweight or obese in Switzerland [8–11]. At the time of the study, compared to the rest of Switzerland Canton Ticino presented the highest rates for overweight and obesity for adults (39.9%) and for children (23%) [12–15].”

3. Method

* Line 208-209 you use the term baseline, I might be wrong, but I don't think you've explained that BL is baseline prior to this, I think you only do it after, so just include it where you first use the term.

We explain the acronym BL in the third paragraph of the Methods section (prior to this sentence): “The baseline (BL) survey was sent to all those registered (see further information below) and had to be completed in the week of 13th-19th September.”
* Did children complete the food diaries themselves or did their parents help them? If children completed it alone, how confident are you that the children knew exactly what was in their food? In my experience, even 10-11 year old children don't really know what is in their evening meal, they tend to just know the name of it e.g. lasagne.

We collected data directly from children. To make it even more clear, we added “from children” in the following sentence (paragraph after the CONSORT chart): “Food intake data were collected from children at both BL and at follow up (FUP - November 29th – December 5th)”. The next sentence also states it is children who reported their own food consumption: “For each day of the week, children reported what they ate using a 7-day food diary [38].”.

Regarding how confident we are that children know what they ate, we conducted a study measuring agreement between parents and children using the 7-day food diary used in this study, and we found that children are reliable reporters. If you are interested, you can find more details here: Rangelov N, Suggs LS, Marques-Vidal P. I did eat my vegetables. Agreement between parent and child food intake diaries. Public Health Nutr. 2016 Dec;19(17):3106–13.

We added the following sentence: The 7-day food diary was tested in another study by the same authors to compare agreement between children and their parents, showing that children are reliable food reporters [38].

* You mention that the children did not report portion sizes, so did the children just report what they ate, rather than the amount? So just listed what was on their plate? Did the question ask them only to say what they'd eaten as I know children can sometimes include food, especially vegetables, which were on their plate but they didn't actually eat them.

Children were asked to report everything they ate (not what food was served to them). As we report in the paper, we did not ask for portions as children of this age range have been shown to be unreliable in accurately quantifying their food intake. In our sample it happened that children from the same family reported slightly different food consumption, which suggests they were accurate in reporting what they ate and not what was given to them (for example, a child reported to have consumed fruits dairy products at breakfast, while his sibling reported dairy products, fats and sweets. The first child also reported water at dinner, while the sibling did not).
* Please give some examples of some of the food you coded for in line 232 onwards. Do soft drinks include fizzy and still juices? Do sweets include cakes and chocolate? Did you consider fats from oils, butters and things like avocados?

Yes, we did consider the foods you listed as example. To make it more clear, we provided a few examples for the different categories of food we coded:

Based on the Swiss Society for Nutrition (SSN) [39], 12 food categories were coded: water; fruit (fresh, dried or baked; 100% fruit juice); vegetables (fresh and cooked, also vegetable soup; 100% vegetable juice); starchy foods; meat; fish; eggs; dairy products (i.e. milk, cheese, yoghurt); fats (i.e. oil, butter, olives, nuts); fat meat and fat fish (i.e. salami, breaded fried meat or fish); sweets (i.e. cookies, jam, cakes, chocolate, ice-cream); and soft drinks (i.e. fizzy soft drinks, sweetened ice-tea, sweetened still juices, syrups).

4. Results

* Was there a way of monitoring how frequently the parents accessed the website and excluding participants whose parents didn't visit the website? I understand from such a large sample this may not have been possible.

Yes, parents access data (including date and time) were recorded on the Website server. We provide data about the frequency and percentage of parents who accessed the Website and of children whose parents visited it in Table 3. Other details about the exposure to the intervention are described in another paper that is under review.

5. * Did you examine whether gender or BMI had an effect on the results? It is possible that weight-status may have affected children's change in eating behaviour.

We run the analysis to check whether gender or BMI had an effect on the results, and we found no effect fro these two variables. We attach a supplemental table showing the results.
6. Discussion

* Line 338: You state that the email had a positive effect on fat meat and fat fish, can you just clarify what you mean by positive effect here.

We modified the sentence to read as follows:

While not significant, the results obtained for G2 show that the e-mail had a positive effect on fat meat and fat fish, which consumption decreased, compared to G1 where it increased and to G3 where it did not change.

* Explain in more detail what your results mean. How much did children's fruit intake increase? Was this an important amount or just a small effect? Discuss the implications of these findings.

We added the following paragraph to explain in more details our results and their implications.

For example, if we consider fruit consumption, we can see that fruit consumption of children in G1 increased by 0.17 times/day at FUP, which means, at least one more fruit consumption per day. Children in G2 and G3 also increased their fruit consumption, even if this increase was not statistically significant (0.12 in G2 and by 0.25 for G3, summing the effect of the Web and that of e-mail or SMS respectively). This means, for instance, that if at BL children ate fruit only at one occasion per day (FOC = 1), after the intervention they ate it 0.17 times per day (G1), 1.12 times (G2) and 1.25 times a day (G3), meaning at least an additional occasion of consumption per day, which is meaningful from a public health perspective.

* Include how these results can be generalised outside of this region. How are they applicable to other parts of Switzerland, other European countries?

We added the following sentence:
The aim of this study was to examine the effect of a Social Marketing healthy nutrition program on children's food intake. The results show that children increased their daily consumption of fruit, and decreased that of sweets, which is an important finding for public health. Indeed, food consumption habits are among the leading factors for many health issues, and increasing fruit and decreasing sweets consumption are among the recommendations for a healthy diet. Since the Social Marketing framework was used to develop the FAN intervention, and since positive results were found, FAN could be easily adapted to other Cantons in Switzerland, or other countries, with the aim of improving children’s nutrition.

* Line 355, why is it important that this is the first study to investigate parents and children in this specific area?

At the time of the study, there were no available data regarding Ticino children’s food consumption (while they were existent for other regions). We added the following sentence:

This fills the gap regarding the lack of available data about food consumption among children in Ticino, and it provides insight regarding to what extent SMS or e-mails directed to parents can improve children’s eating behavior above and beyond a Web-based intervention.

* Provide more suggestions for future research. For example, line 377, you suggest that the effects may have been due to other causes than the intervention. How could this limitation be addressed in future research?

We suggest that future studies should examine if interventions effects differ when the communication is sent to the child only, compared to parent only, and to both parent and child (to overcome the following limitation: The effects found might be due to the combination of the communication to the parent and the communication to the child, or solely due to the communication sent to the child.).

Regarding the point you raise, it is common in this type of studies that some behavior change might occur because of the fact that children know they are under observation (i.e. have to
complete a food diary). We also state that using a 7-day food diary allowed the accurate collection of data, while minimizing those observation effects (knowing that observation effect wears off after 3-4 days).

* I think you need to be point out the novel parts of the study early on in your discussion to show the reader what is new and how it contributes to the field.

We think we addressed that by adding the explanations to your previous feedback. If you have further suggestions, please let us know.