Author's response to reviews

Title: Promoting prudent use of antibiotics: the experience from a multifaceted regional campaign in Greece

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Author's response to reviews:

Response to Reviewer 1

1.: In l. 7 – Assuming that consumers engage in judicious antibiotic use, they would expectably not use antibiotics unless strictly necessary. In this case, why separate the goal of fostering judicious antibiotic use from the goal of decreasing antibiotic consumption? Shouldn’t we be discussing “prescription” instead of “consumption” at this stage?

Response: We do not feel that the goal of fostering judicious use is separated from the one of decreasing consumption. To the contrary we believe that the first would lead to the other. We have rephrased the sentence accordingly to “…and consequently decrease consumption”. “Consumption” would include both prescription and use of antibiotics without prescription, a practice that is common in Greece.

2.: “There is a direct association between antibiotic resistance and antibiotic consumption [1].” – There is evidence suggesting that this association exists, but this relationship is not linear (e.g. see Bergman et al, 2009). Therefore, I would suggest that the Authors take this into account and soften their statement. In fact, they do so in the beginning of the Discussion section, hence it is just a matter of rephrasing.
Response: “direct” has been removed from the sentence
3.: In l.3-7, it would be advisable to refer the source of the data used to justify this claim.
Response: This was added
4.: “Antibiotic consumption is highest in the community” – in comparison to what other groups?
Response: This was rephrased to “antibiotic consumption is higher in the community compared to hospitals”
5.: “It is therefore assumed that antibiotic overuse in the community can be targeted without any health hazards.” – It is assumed by whom?
Response: This was rephrased to “Therefore antibiotic overuse in the community can be targeted without significant health hazards”
6.: I would write the expression “including education and media campaigns” between commas.
Response: Commas were added
7.: “The outcome of these interventions has been difficult to assess due to the multiple confounding factors that affect antibiotic use.” I would suggest some examples of these factors be listed.
Response: The following phrase has been added: “including seasonal and annual variability in the incidence of infections”
8. “However a majority of the studies indicated a reduction in the antibiotic prescription rates following the intervention.” Some references are required herein.
Response: These are included in reference no 3
9. I wonder how many parents took part in the educational campaign. This information is important.
Response: This information is provided in the results section
10. How many physicians were involved in the academic detailing?
Response: This information is provided in the results section
11. “… followed by four short interactive sessions based on the management of specific cases.” – It would be useful to have an example of these cases, to understand what exactly was asked of the participants.
Response: The following has been added:” Such cases included patients with acute pharyngitis, otitis media and urinary tract infections.”
12. Taking advantage of the fact that BMC Public Health is published online, I wonder if the Authors would be willing to share the materials used in this program with the readers.
Response: Thank you for your interesting suggestion. However, the educational material is in Greek, preventing it from being of much use to the majority of the readership of the journal.
13. For readers who are not familiar with “RADT for Streptococcus pyogenes was”, could the Authors please explain what this is.
Response: The acronym was replaced by “Rapid antigen detection test (RADT)”

14. “The rest of districts in Peloponnese and the national rate served as controls and data were compared before and after the campaign between January 2009 and February 2009.” – How exactly were these data compared? What kind of statistical analyses were performed? This is a particularly relevant piece of information.
Response: Comparison of DIDs of antibiotics before and after the intervention was performed using the Fisher’s exact test. This information has been included in the Methods section.

15. “In total 772 parents participated in the meetings. In the academic detailing meetings 111 physicians and 30 dentists were present.” – It would be interesting to know how many were invited.
Response: The following data have been added to the body text (originating from www.statistics.gr)

" In total 772 parents participated in the meetings (approximately 7% of the estimated number in total, if a 1:1 child : parent ratio is considered - a total of approx. 11000 children attended primary school and kindergartens in the prefecture of Corinth in 2009). In the academic detailing 111 out of 486 physicians in the prefecture (approximately 20%) and 30 out of 151 dentists (approximately 23%) were present (data derived from www.statistics.gr for the year 2009)."

16. I would suggest the data be presented in a table or graph, as it would be much more appealing and easier to analyze.
Response: The responses to the questionnaire are presented in a table

17. “34 (11.6%) admitted to occasionally buying antibiotics without prescription from the pharmacy” – The fact that Greek legislation allows the purchase of antibiotic drugs without prescription should have been previously highlighted, as this is certainly a key element affecting antibiotic consumption behaviors, and one that varies from country to country, even in Europe.
Response: In fact antibiotics are prescription-only drugs in Greece. However this is not strictly enforced, leading to over the counter antimicrobial sales by pharmacies

18. “Regarding adverse events caused by antibiotics 96 (32.8%) responders reported of having experienced adverse events” – What kind of adverse effects were these?
Response:

19. “On the other hand no significant change in the antibiotic distribution was observed in the same time period at the national utilization rates.” – How exactly do the Authors know that these variations are (or are not) significant? There is no indication about the statistical analyses performed to support the claims made. I
would strongly recommend proper analyses are carried out, including effect size estimates.

Response: Comparison of DIDs of antibiotics before and after the intervention was performed using the Fisher’s exact test. This information has been included in the Methods section.

20. “Administration of antibiotics according to Centor scale in both groups is depicted in Tab. 3.” – It is essential that unacquainted readers be informed of what are the Centor criteria.

Response: A reference to the Centor score was added

Discussion

21. To some extent this section resembles more of a summary, rather than a proper discussion. Paragraphs such as “The present campaign was designed to /…/ at inducing change in prescribing behavior in various settings [7]”, although informative, provide repeated information instead of a scrutiny of the findings obtained.

Response: We believe that a short summary provides some added value in the discussion.

22. “These data confirm that there is a significant gap between academic knowledge and everyday prescription practice and patient behavior regarding antibiotics.” – I agree with the Authors, of course, but it would be important to have some insights about possible explanations for this phenomenon.

Response: Unfortunately the results of this study do not provide insight in the possible explanations.

23. “According to the results of the study no major change in the total number of antibiotics prescribed was detected. However the observed data indicate that in the targeted district antibiotic utilization was more rational, as reflected by significantly increased use of amoxicillin or penicillin according to the national guidelines and a decrease in the use more broad-spectrum antimicrobials like macrolides, 2nd generation cephalosporins, fluoroquinolones and amoxicillin / clavulanate. However, after the end of the campaign, antibiotic use tended to revert to previous levels, indicating the need for continuous educational initiatives (or at least of longer duration or repetitive)” – Again, not only is this a repetition of the information previously provided in the results section, but there is no statistical support for these observations, which inevitably hinders their reliability and meaningfulness.

Response: Details on the statistical evaluation of the data are included in the Methods and Results section.

24. “The effect of the previous educational campaign cannot be adequately assessed.” – I do not understand this claim. What do the Authors mean by this?

Response: The physicians had also participated in an educational campaign the previous year. The effect of this previous campaign may have biased the results of the present study, which failed to show an effect of the use of RADT.

25. “In conclusion a multifaceted campaign was performed for the first time in
Greece, addressing the multiple factors that influence the utilization of antibiotics (providers and public). In general, it revealed the gap that needs to be filled in the proper education of the public in terms of antibiotic use and it provided a starting point for improvement in certain aspects of providers’ practices in terms of antibiotic prescribing. Similar campaigns implemented for longer period of time and at a larger scale may promote the prudent use of antibiotics, with a final aim to reduce antimicrobial resistance in the community” – I am afraid that, besides repeating information that has already been consistently provided throughout the manuscript, this conclusion does not add significantly to the state of the art on this topic. I would suggest the Authors focus on the most relevant findings they encountered, scrutinize them (following the performance of sensible statistical analyses), and highlight the major implications of this study. Also important would be to have a clear discussion of the limitations of the study, which is absent from the current submission.

Response: A paragraph on the limitations of the study has been added.

Figures
26. Is Figure 1, which depicts the questionnaire used in the study, really a figure or is it a table?
27. In figures 2 and 3, it is written Korinth.
Response: This was corrected

General writing and formatting
28. The writing and English level are overall acceptable, although the text can be confusing and repetitive at times, and would therefore benefit from a general revision. I have also identified numerous typos. Examples of these situations include:
- In the abstract, l. 6 - there are two ‘spaces’ before the word “aiming”;
- In the introduction section, there is a ‘space’ missing between “success” and “[3];”
- In the methods section, “The educational material and the programme was” – The word “was” must be replaced by “were”;
- In the methods section, there is an extra space between the link http://www.ifet.gr/antibiotics_site/FrameSet6.htm and the ‘period’;
- In the methods section, “Filling the questionnaire by parents was on a voluntary basis and anonymous, in the scope of providing a background for the discussion to follow and the issues raised by the parents.” – This sentence is very confusing. I would definitely recommend a revision to clarify the message;
- Still in the methods section, “(also available to download at www.keelpno.gr, www.eof.gr and www.ifet.gr)” - There is a ‘period’ missing in the end of the sentence.
- In the results section, there is a ‘space’ missing between “(p=0.02)” and “(Fig. 3)”;
- In the discussion section, “A variety of reasons may account for this difference
from previous studies” – I would revise this sentence: “according to previous
studies; - “The latter finding is especially important in Greece where consumption
of macrolides is especially high with accompanying high rates of resistance.”; -
“In general, it revealed the gap that needs to be filled in the proper education of
the public in terms of antibiotic use and it provided a starting point for
improvement in certain aspects of providers' practices in terms of antibiotic
dispersing.”

Response: Thank you for your corrections. They have been incorporated in the
text as appropriate

Response to Reviewer 2
Both comments 1 and 2 are discussed in the discussion section.
We have added p value at table