Reviewer's report

Title: Nonsynostotic plagiocephaly: a child health care intervention in Skaraborg County in Sweden

Version: 2 Date: 10 Sep 2018

Reviewer: Brent R. Collett

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This study adds to the sparse literature on preventive interventions for non-synostotic plagiocephaly, a common condition in infancy and frequent reason for referral to craniofacial and other specialty clinics. Other interventions described in the literature (e.g., orthotic helmets) are costly with modest evidence to support their effectiveness. Utilizing nurses as interventionists, the approach described has good potential to improve the standard of care in primary care settings. The authors appear to have done a nice job addressing common in this type of study (i.e., blinded assessment, reliability estimates for head shape measures).

There are several limitations that make it difficult to interpret the findings, some of which might be addressed depending on existing data.

1. Treatment fidelity. Unless I missed it, there do not appear to have been procedures to assess and monitor treatment fidelity. This is important on two levels: (1) Given that there were 35 different nurses implementing the intervention, it seems likely that there were differences in the extent to which they followed the treatment protocol. It may also be that nurses in the control group were making similar recommendations, even without prior exposure to this intervention. Within interventionists, there may have been 'drift' over time. How was this assessed and monitored, and were there procedures for re-training nurses as needed? (2) Among parents, it would be ideal to include data on behavior change and implementation of treatment recommendations. For example, it would be interesting to limit the analysis to parents who implemented the recommendations at some minimum threshold. Treatment fidelity is especially important, given the preliminary nature of this research ... i.e., showing that the intervention itself resulted in changes, determining which components are most important, how to replicate the intervention in future research, etc.
2. Baseline characteristics. I understand the rationale for assigning participants to treatment vs. control groups, rather than using randomization. It is reassuring that the two groups of infants were similar in most respects (I would recommend including Table S2 in the article, and add any demographic information available ... this seems too important to include only as a supplemental file). It would be helpful to include some description of the clinics and nurses in the two groups. For example, do the clinics serve similar patient populations in terms of socioeconomic status, etc.? Are the nursing staffs comparable in the two groups, or might they differ in important ways (e.g., education level, years of experience, etc.)?

3. Continuous vs. categorical measures. Given the preliminary nature of the study and the relatively small sample size, it seems that it might have been better to use continuous measures (e.g., standardized effect size estimates) vs. categorical outcomes. I understand that this might raise questions about clinical relevance, but it would also provide more robust data about treatment effects and help to justify larger scale replications of the intervention.

4. Parent report data. More information is needed regarding parent report measures (time spent in a bouncer, car seat, tummy time, etc.). It is not all that surprising that these measures are highly variable, and I question the reliability/validation. For example, how recent was the interval for their reporting (i.e., last week, last day, etc.)? Am I correct in assuming that these were open-ended questions? Further, it seems likely that responses would be influenced by social desirability (i.e., parents might know that they are supposed to encourage tummy time/limit time in positioning devices, and this may affect their responses).

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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