Author's response to reviews

Title: Assessment of the feasibility and coverage of a modified universal hearing screening protocol for use with newborn babies of migrant workers in Beijing

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Author's response to reviews: see over
Authors’ response to the reviewers of MS: 4258162058832502, entitled "Assessment of the feasibility and coverage of a modified universal hearing screening protocol for use with newborn babies of migrant workers in Beijing"

Reviewer(s)’ Comments to Author:
Reviewer: Peter Watkin
Comments to the Author

i. In the Conclusions of the study the authors state that “our study shows that it is feasible and practical to achieve high coverage rates for screening/ rescreening for hearing loss in newborns of migrant workers”. I find it difficult to accept that this is really an accurate description of their study achievement. The initial coverage in Shangdi hospital was exceptionally high and by offering more screen contacts for those requiring follow up there was clearly a lowering of the attrition rate, but of those 2207 infants who needed follow up after they had received the additional Step 1 and 2 TEOAE contacts, 1006 failed to receive the required follow up test (46%). By introducing the additional TEOAE contacts the attrition rate was unequivocally reduced and coverage improved – but successfully enrolling 54% of the follow ups who required a further test probably can’t be considered as achieving high coverage in this follow up group. The conclusions should in my view reflect this.

Author response:
We agree entirely with the reviewer’s suggestion. This section has now been slightly revised as shown on page 14.

Original: Our study shows that it is feasible and practical to achieve high coverage rates for screening for hearing loss in newborns of migrant workers, using a modification of the currently employed UNHS protocol.

Corrected: Our study shows that it is feasible and practical to achieve high coverage rates for screening for hearing loss in newborns of migrant workers, using a modification of the currently employed UNHS protocol. And this modified protocol try to increase the rescreening rate at the same time, although it is not succeed now.

ii. In the Methods the sentence “the normal criteria for ABR wave V latency within developmental norms in response to 30 dBnHL clicks on both ears at frequencies from 2 to 4 kHz” is difficult to interpret and isn’t readily intelligible or scientifically correct. It doesn’t add any information important to the understanding of the paper and would be better omitted.

Author response:
We agree entirely with the reviewer’s suggestion. We have deleted that sentence. This section has now been slightly revised as shown on page 7.
Original: “The normal criteria for ABR wave V latency within developmental norms in response to 30 dB nHL clicks on both ears at frequencies from 2 to 4 kHz, and hearing loss was categorized as mild (31-50dB nHL), moderate (51-70dB nHL), severe (71-90dB nHL), or profound ≥91dB nHL).”

Corrected: “The hearing loss was categorized by ABR wave V latency as mild (31-50dB nHL), moderate (51-70dB nHL), severe (71-90dB nHL), or profound ≥91dB nHL).”
Reviewer(s)' Comments to Author:
Reviewer: Bolajoko O. Olusanya
Comments to the Author

Compulsory Revisions

1. It is unclear how the introduction of an earlier OAE screening test at 24-48hours after birth (with the likelihood of higher false-positives and maternal anxiety) as well as the additional outpatient screening at 2 months would have resulted in improved outcomes without comparing the recommended protocol for China with the authors’ modified protocol among the migrant population.

Author response:

Before to answer this question, we should lay stress on the demography characteristic of subjects. Migrant people was defined as he/she didn't have registered permanent residence, stable work and fixed accommodation in Beijing.

In this research, all babies were from migrant families, it means the community health system cannot control these babies because they didn’t live in a fixed community. So, once they miss the inpatient hearing screening, they maybe lost this opportunity forever. Due to these reason, increasing the coverage rate of screening during the inpatient period has become the most impatient thing. We added an earlier OAE screening test at 24-48hours aimed to increase the coverage rate of hearing screening.

We have rechecked the data and found that 2169 infants would lost the inpatient hearing screening obeyed the recommended protocol, 492 of 2169 infants didn’t pass the inpatient hearing screening. This result pointed out 492 infants who suspected to have permanent childhood hearing impairment would be omitted without the earlier OAE screening test at 24-48hours. Because these 2169 infants left hospital about 48hours, we can’t get their screening data older than 48hours, so we can’t provide more compared results. We thank the reviewer for pointing out this problem and we will try our effort to contemplate the related data in the future projects.

2. Methods: The enrolment criteria need to be clearly stated. How were migrant mothers distinguished from non-migrant mothers? How were they identified at various stages of the protocol?

Author response:
The migrant families were defined as parents neither have registered permanent residence nor stable work in Beijing. This section has now been slightly revised as shown on page 6.

3. Methods: Hearing impairment Testing Protocol: This section needs to be clarified. For instance, the recommended or official UNHS protocol in China (Figure 1) suggests that the first inpatient screen should occur 48-72 hours after birth. The understanding from the paper is that the authors introduced an additional inpatient screen at an earlier period of 24-48hrs after birth under their modified protocol. It is therefore confusing to state that modified protocol "incorporated an additional inpatient OAE test 48-72hrs after birth" as this was already included in the official UNHS protocol for China.

Author response:

We thank the reviewer for pointing out this problem. We agree with the reviewer’s suggestion. To define the earlier period of 24~48hours as the additional inpatient screen was better. This section has now been revised in related part on page 6 and 12.

Additional Observations:

4. The authors have not adjusted for infants who were lost to follow-up in computing the referral rates.

Author response:

We thank the reviewer for pointing out this discrepancy. We only computed the total incidence of SNHL included missing subjects. And we will be contemplated in future research projects in our department.

5. The title for Figure 3 suggests a comparison between the outcomes for the recommended protocol and the modified protocol. However, this is not reflected in the data presented in the flow chart.

Author response:

We have expressed the compared results in the flow chat, but we maybe didn't describe it clearly. We have changed this figure to show the compared results more clearly. This section has now been slightly revised as shown on page 22 and 23.

6. Discussion (page 11): The first paragraph needs to be revised to reflect the fact that the NIH recommended a two-stage screening first with OAE followed by AABR for OAE referrals. Diagnosis with ABR is for those who failed the two-stage screening (i.e. OAE plus AABR).
Author response:

We thank the reviewer for pointing out this discrepancy. But, during the period of this research, most of the hospitals in China have still followed the old version of the two-stage screening first with OAE followed by OAE again for first OAE referrals recommended by NIH. Please check the reference; we have cited the NIH Consensus Statement in 1993. The new two-stage screening protocol (i.e. OAE plus AABR) have been applied in China in 2010. This section has now been slightly revised as shown on page 11.

Original: In China, most hospitals follow the OAE screening followed by a final diagnosis using the ABR test, as recommended by the US National Institute of Health (NIH).

Corrected: In China, most hospitals follow the OAE screening followed by a final diagnosis using the ABR test, as recommended by the US National Institute of Health (NIH) in 1993.

7. Discussion (page 12, paragraph 1): It is still unclear how the authors “have demonstrated that there was increased coverage rate in the target population” when no baseline data based on the official UNHS protocol was not provided. For instance, how many babies were screened that would have been missed under the official protocol?

Author response:

We agree entirely with the reviewer’s suggestion. We should provide the baseline data based on the official UNHS protocol. We have rechecked the data, 2169 infants left hospital younger than 48 hours. So, the coverage rate was increased from 79.38% [ (10983-2169)/11104] to 98.91% (10983/11104).

8. Figure 3: The second inpatient OAE is recorded as greater than or equal to 72hrs whereas, in the text, this was recorded as 48-72hrs. Please clarify

Author response:

We have checked this figure. This section has now been revised as shown on page 23.