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OPEN PEER REVIEW

Factors Associated with Intra Hospital Neonatal Mortality: A Case Study of the Neonatology Department at the Regional Hospital Center of Agadir (Morocco)

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

1 comment · 26 Jan 2024

Referee 1 Reviewer

MAJOR REVISION 26 Jan 2024

Dear Author
Thank you for your submission.
Overall, please check that the verbs in the article are consistently in the past tense, reduce the number of subtitles, and check that the results are presented logically. For example, prevalence can be presented at the beginning of the results.
Abstract
1- The background part is very long; please shorten it.
Please reduce the word count to 250 and check the keywords against MeSH.
Introduction
1- Please describe the important factors associated with neonatal mortality and their relative contributions to it.
2- Please present important studies from your country on the neonatal mortality rate.
3- Please shorten the description of ways to decrease neonatal mortality because this is not the aim of your study.
Method
1- How were neonates who participated in the validation test of the data collection instrument excluded?
2- Ethical approval should be granted by your institute with an ethics code. Please add it to this part.
Result
1- Please check the sentence "5.3% of cases were from singleton pregnancies, 30.8% from twin pregnancies, and only 3.9% from multiple pregnancies " regarding the prevalence of different types of delivery.
Discussion
1- Please describe the reasons for the differences between your results and those of other studies.
2- Please give your recommendations for other studies in the conclusion part.
3- Please give some information about infection and death rates.
Conclusion
1- Please give your interpretation of the article's findings, recommend your solution to the problem, and offer advice on how other studies in this field can be conducted to yield better results.
Best Regards

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Replies to reviewers:

The verbs have been verified and are identical to the past tense, the sub-headings have been reduced and the logical sequence of results has been verified and given in a logical order.

Reviewer 1:

Abstract: the number of words has been reduced to less than 250 words and the keywords have been checked with Mesh.

Introduction:

1. The factors associated with neonatal mortality have been mentioned
2. The studies carried out in your country on the rate of neonatal mortality have been added
3. 3- The description of ways to reduce neonatal mortality has been decreased.

Method

1. It was a poorly formulated sentence: in order to avoid bias, the measuring instrument was tested on a small sample of files (10 files) excluded following random sampling, with a view to improving its quality. The aim was to detect errors, ensure that the questions were well understood, that the terms used were clear and precise, to reduce the number of questions that were too complex, to eliminate duplication and bias, and to test the order of the questions with a view to making the questionnaire harmonious and progressive.
2. The Ethics Committee of the Faculty of Medicine and Pharmacy of Rabat has approved this study with reference number (C64-20).

Result

The correct sentence is : 65.3% of cases were from singleton pregnancies, 30.8% from twin pregnancies, and only 3.9% from multiple pregnancies.

Discussion

1 & 2. This study reported ultra-early age, early age, intra-hospital referral and transfer as factors associated with the risk of early neonatal mortality. Nevertheless, this study had certain limitations. The retrospective nature of our study, based on data from hospital records and registers, meant that a large amount of data was missing caused by under-notification of data, in particular socio-demographic, clinical, medical and obstetrical data on the mothers of newborn babies. Given the high proportion of missing data for these variables, they were not investigated in our study. Otherwise, the dearth of information was also a limitation in this study, resulting in a difference between our results and those of other studies. To strengthen our findings, we recommend similar prospective research involving all the obstetric and neonatal team over a longer period with a comparison of the results with some regional and countries.

3.Give some information about the infection and death rate: “The main diagnoses for hospitalization of newborns who died in the neonatal unit were prematurity (59.7%), neonatal distress (14.3%), convulsions (5.8%), malformation (4.3%), jaundice (2.9%) and neonatal infection (1%).WHO (2020) declared that premature birth, birth asphyxia, infections and birth defects are the main causes of neonatal death(6).

Conclusion

Neonatal mortality is an indicator of population health. It represents a significant health challenge worldwide, particularly in developing countries where rates of neonatal mortality are predominant such as the neonatal mortality rate at Agadir hospital, which remains high. The

results of the present study highlight the need to strengthen efforts to eliminate preventable deaths and bring about significant changes in the field of maternal and child health. Through better monitoring of pregnancy and ensuring early diagnosis, monitoring and surveillance of pregnancy, screening and management of high-risk pregnancy better monitoring of delivery, good management of childbirth, promoting intrauterine transfer and improving transfer conditions. Additionally, quality care for small and sick newborns.

Reviewer 2:

Comment 1: the sample size has been added to the abstract "308 deceased neonates were included. The intra hospital neonatal mortality rate was 17.4%, 95% CI [13.2-21.7]….."

Comment 2: To determine the sample size, the site used is the Cleveland Clinic Risk Calculator Library Department of Quantitative Health Sciences.

Comment 3: TO BE REPRESENTATIVE, THE MINIMUM SIZE calculated is 108, below which the study will be biased. Given the accessibility, motivation, availability and engagement of our team. WE DECIDED TO enlarge and recruit as many cases as possible in order to explore and collect more information; therefore, we finally collected 308 cases.

Comment 4: the results section has been strengthened,

Comment 5: the univariate analysis has been added

Comment 6: some contextual information has been added for better understanding.

Comment 7: the reference level for mode of admission variable was the ordinary admission, its description has been added to the outcome criteria "The modes of use of hospital services and benefits are: i) ordinary admission - any scheduled hospitalization outside of emergencies; ii) emergency admissions (emergency consultations, transfers, and intra-hospital referrals) (20)."

Comment 8: the results of multivariate logistic regression have been described in detail.

Comment 9: the statistical test is added and noted under the table.

Comment 10: after checking the distribution of quantitative variables, on the basis of graphical representations, including histograms, Q-Q diagrams and the Shapiro-Wilk test. Quantitative variables were presented as median and interquartile range. (Section method, part analysis statistics)

Comment 11: did you check normality of obserævation? Absolutly, our team has rigorously respected the conditions of description and statistical analysis in the verification of normality and in the conditions of use of statistical tests. (Section method, part analysis statistics)

Comment 12: What p-value did you consider as the cutoff point in the univariate analysis? "The significance level is set at $p<0.05$ for all conducted analyses. To determine factors associated with early NNM, we employed binary logistic regression in both univariate and multivariate analyses, including all statistically significant variables $p<0.05$ in the multivariate model. (Section method, part analysis statistics)

2 Revision 1

1 comment · 31 May 2024

Referee 1 Reviewer

MINOR REVISION 31 May 2024

Dear Author
Thank you for the revision.
Overall, some spelling errors remain, and English editing is mandatory.
Abstract:
1- The conclusion part should be based on facts extracted from the article's findings. Please explain what resulted from the study.
Material and Method:
1- Please check the study type: is your study descriptive or analytic?
2- What were the measuring instruments, and how were they tested?
3- For the sentence "It was categorized as early for deaths during the first week and late for deaths during the subsequent three weeks ?", we recommend early death and late death.
Results:
1- Please give your results on late death and compare them with those on early death, if possible.
2- The tables have not been added.
Discussion:
1- Please compare all your results with other authors' results one by one and explain the differences and similarities.
Best Regards

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Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Replies to reviewers:

Reviewer 1:

Comment 1: the reason for considering the 0.05 threshold is based on the choice of the best model in multivariate analysis (according to lowest AKAIKE's information criterion and R^2); even when considering 0.25 or 0.2, no factors are added in multivariate analysis. For this logic, the research team opted for 0.05 as the significance threshold.

Reviewer 2:

The dictation errors have been corrected

Abstract:

Conclusion: “Neonatal mortality remains a major public health challenge in Morocco. Different risk factors associated with neonatal mortality have been identified. Addressing these factors could reduce neonatal deaths in low resource countries. For this reason, we need to intensify our efforts to develop reliable and precise approaches.”

Material and Method

1. Type of study: is your study descriptive or analytical? It is an analytical study (this is corrected on the manuscript).

2. The measuring instrument: The data collection instrument was in the form of a file operating questionnaire used in the study, which had been carefully designed and consisted of a set of questions used in a uniform manner by all team members. To establish reliability and validity, the instrument was tested by administering the questionnaire or parts of it on the same files at different times or in different situations by the different team members involved in data collection, to determine the extent to which responses were the same.
3. In this sentence: ‘’It was categorized as early for deaths during the first week and late for deaths during the subsequent three weeks’’ We recommend early death and late death: it has been corrected.

Result

1. Comment: Pls give your results on late death and compare them with early death if possible:
   Response: the team's vision is to investigate the factors associated with early neonatal mortality by comparing it with late mortality, because the highest mortality rate according to research the early neonatal period is the most critical period with the most deaths.
2. The tables are added in this version

Discussion

1. Our results (the identified factors) have been checked with those of other authors, one by one, and explanations of differences and similarities have been added.

3 Revision 2

1 comment · 16 Jul 2024

Referee 1 Reviewer

ACCEPT 16 Jul 2024

Dear Author
Thank you for your submission.
Abstract:
Results:
1- What is "emergrncy mode of"?
Method:
1- Please remove subheadings if possible.
2- What are "05 self-pushing syringes"?
Best regards

4

Revision 3

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Replies to reviewers:

Dear reviewers:

I would like to express my sincere gratitude for your valuable contribution as a reviewer for our article. Your expertise, dedication, and constructive comments have greatly enriched our work and been invaluable in improving the quality of our research. We are grateful for the time and effort you dedicated to reviewing our article. Your expertise has truly enriched the publication process, and we are confident that your contribution will help foster significant academic discussion in our field. Thank you.

Reviewer 1:

- **Abstract, results:**

Comment 1: what is"emergency mode of"

Response: It was a dictation error: we meant emergency consultations as one of the modalities for emergency admission described in the Materials and Methods section. And it has been corrected in the manuscript.

- **Method:**

Comment 1: pls remove subheadings if possible

Response 1: subheadings in the method section are removed

Comment 2: what are "05 self-pushing syringes"?

Response 2: The neonatology and intensive care unit is equipped with 05self- priming syringes: an infusion pump or syringe driver (SD) or electric syringe driver (ESD) which is a medical device used to administer small quantities of fluid (with or without medication) to a patient through an infusion pump.

Reviewer 2:

Comment: Please you explain that how to select the variables for entered in multivariate model.

Response: The selection of variables for inclusion in a multivariate model involves a systematic approach to ensure that the model is significant, interpretable and provides accurate predictions. In this approach all variables that had $p \leq 0.05$ in the univariate analysis were included in the multivariate model.

Best regards,

4 Revision 3

0 comments

No public comments in this round.