Summary: The paper investigates “Factors associated with early newborn care practices in Bangladesh: Evidence from Bangladesh Demographic and Health Survey”.  Despite being a significant public health concern for Bangladesh, this topic has already received considerable attention from numerous earlier and recently published studies. The purpose of the study has also been used in the past to explore comparable issues utilizing earlier data on Bangladesh. As a result, the paper's main original addition appears to be its application of this study to the most recent available data, and its conclusions largely—and not surprisingly—reflect those of previous research. The majority of references are too old. I am requesting the author to cite the most recent reports and statistics that are accessible.

The paper needs to be thoroughly proofread by a professional or expert. It is not written to a high degree for academic writing, and there are several grammatical errors, which frequently make claims and arguments less clear. Additionally, the authors ought to eliminate any similarities from this work. Numerous times, the way that statistical results are interpreted is also wrong. The paper also neglected to mention or cite comparable but equally significant published studies on essential newborn care in Bangladesh. The introduction fails to effectively justify the need for studying the issue, and the paper's findings by itself are insufficient to support the conclusions.

Below are some comments with more information:  
  
**Abstract**  
  
Page 3 lines 17-18: For the design of the study, the authors should explicitly mention that BDHS data are essentially cross-sectional data.

Page 3 lines 25-34: In results, please show some numeric values/results. “The study shows that newborn care practices are associated with some demographic and socioeconomic characteristics. The tendency of employing a clean delivery kit during delivery and skin-to-skin contact afterbirths are not standard practices in Bangladesh”. Transfer these lines to the conclusion.   
  
**Introduction**  
  
Page 3, line 59: “The number of newborns dying in Bangladesh remains very high at 62,000 per annum,…” - the reported statistics are not correct. In 2016 newborn deaths were reduced to 62,000, not in 2018. The cited reports for reference have been published in 2018 but used data from 2016. If possible, please provide some recently available statistics.  
  
Page 4, lines 29-31: “Regarding the identification of newborns deaths, (UNICEF, 2009) found almost 40% of mortality makes up for under-five deaths in developing countries.” Please provide recently available statistics.

Page 4, lines 33-34: “Out of the 3.7 million neonatal deaths and 3.3 million stillbirths every year 98% of all happened in developing countries (Carlo WA and Goudar SS, 2010).” Please provide recently available statistics.

Page 5 lines 36-40: “Though Bangladesh has made significant progress towards the child and maternal health within the past decades the country yet to develop the overall healthcare system to achieve Goal 3 of Sustainable Development Goals (SDGs)”. The authors must have presented published statistics on the rate of progress toward child and maternal health within the last decade to support this statement.

Page 5 lines 40-44: “In Bangladesh, newborn care practices do not seem to be commonly employed correctly and the majority do not have adequate knowledge about the recommended practices of newborns”. The authors must have presented published statistics on the rate of knowledge to support this statement.  
  
Page 4 lines 44-59, Page 5 lines 4-34: Some of the references cited in those lines support the established association between child mortality and reported factors. Therefore, the interpretation to establish the title/objective seems to be avoided. Please specify some studies related to dependent variables, early newborn care practices (clean delivery kit, skin-to-skin care immediately, bathing delay, prevention of hypothermia, and keeping the newborn warm), and their associated factors. Also, numerous studies in Bangladesh found such an association between early newborn care practices and reported socio-demographic variables.   
  
Page 5 lines 58: “There is no such study that has used the latest BDHS 2017-18 data”. However, there are several studies published recently related to this study but were not cited by the authors. For example:

Abdullah, A.S.M., Dalal, K., Yasmin, M. et al. Perceptions and practices on newborn care and managing complications at rural communities in Bangladesh: a qualitative study. BMC Pediatr 21, 168 (2021). <https://doi.org/10.1186/s12887-021-02633-z>

Jamee AR, Kumar Sen K, Bari W. Skilled maternal healthcare and good essential newborn care practice in rural Bangladesh: A cross-sectional study. Health Sci Rep. 2022 Aug 16;5(5):e791. doi 10.1002/hsr2.791. PMID: 35989946; PMCID: PMC9382035.

Shahjahan M, Ahmed MR, Rahman MM, Afroz A. Factors affecting newborn care practices in Bangladesh. Paediatr Perinat Epidemiol. 2012 Jan;26(1):13-8. doi: 10.1111/j.1365-3016.2011.01239.x. Epub 2011 Nov 30. PMID: 22150703.  
  
**Data, Variables, and Method**

I will suggest making this section name “Methods” and renaming “Methods” and “Statistical Analysis”.

Page 6 lines 11-19: No need for these lines in this section. If you want to explain it, just move it to the introduction.

**Data**

Page 6 lines 23-25: “Bangladesh Demographic and Health Survey (BDHS) is the 8th health care survey in Bangladesh since it started”. This line is confusing, please rewrite it.

Page 6 lines 40-44: “Women (N=2463) who gave birth within the past three years, but did not deliver their last-born child in a health facility”. Please mention how you reach this final sample, as the dataset has information on a large number of women. I request you to follow Figure 1 from the suggested paper: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15617-8>. Provide your inclusion-exclusion criteria.

**Variables**

Page 7 lines 7-52: Some of the variables introduced are not properly defined. Try to provide the WHO definition and the BDHS reports. Because definitions of BDHS reports and other resources may be not similar. Clearly define and calculate/categorize procedures of dependents variables and also independent variables (wealth index,…….) according to BDHS reports. It seems the categories of this paper and the BDHS report have some dissimilarities. Please explain the reason if you recategorize them. Consider only two categories in the religion variable, as other categories lack response.

Page 7 lines 28-39: In Table 1, is there any evidence to categorize them? Please mention. It seems that the categories are not similar to the official BDHS report. Please keep similar to an official report.

**Methods**

Page 7 lines 7-52: “The 2017-18 BDHS asked mothers who had non-institutional deliveries within the past 3 years about all three components of newborn thermal care: clean delivery kit used during delivery when the newborn was first dried, whether the newborn was given skin-to-skin care, and when the newborn was first bathed. The chosen dependent and independent variables are described here in the extensive form before performing any statistical analysis.”. Please remove this line from methods as we explain in the variable section.  
  
The authors should have stated how they decided to choose this particular set of potential explanatory variables (e.g., by picking significant predictors of newborn care practices from recent literature or using their judgment, etc.). They should have also explained why they have excluded variables like the mother’s BMI or height, birth weight or size of the baby at birth, household head’s sex, household head’s ethnicity, access to media (television, newspaper, or radio), which has been consistently found to be associated with newborn care practices in Bangladesh.

The authors also should have stated how they decided on variables in the final model. The statistical criteria to include variables in the model (like P-value <0.05 or feature selection) should be mentioned. Please provide some model evaluation techniques (AIC, BIC, AUROC, and others…..) to justify that you used an appropriate model to explain your results.

As BDHS is survey data, authors should consider survey analysis in both bivariate and multinomial models. I also suggest applying multilevel modeling. Authors should explain about odds ratio 95% CI etc. in the methods section.

Page 8 lines 15-19: “Therefore, we have three categories of essential newborn care like i) a minimum of three newborn care practices, ii) two newborn care practices, and iii) one practice after delivery of newborns”. Why and how we prepared this category.   
  
**Results**  
There are some series issues with the interpretation of results.

Page 8 lines 24-29: Authors did not mention about chi-square test in the method section. Please mention that and remove the explanation from the results.

Page 8 lines 29-30: “Among all the age groups increased newborn care practices are found in mothers aged 21-25 at first birth”. The word “increased” is not appropriate here or from the chi-square test. Applicable in the whole manuscript.

The authors did not mention any odds ratio or coefficient values for the model in the method section and also didn’t mention any level of significance. However, I suggest representing it like (OR: 1.43, 95% CI: 1.01–2.02) in the result section.

Page 9 lines 47: write “and” instead of ‘&’. Applicable for the whole manuscript.

Page 9 lines 58: The odds ratio lower than 1 should be rewritten in percentage.

**Discussion**  
  
Page 10 lines 47-52: The stated percentage of newborn health care is slightly different from the published percentage of the official report of BDHS 2017-18 which uses the same data. The authors may want to explain this deviation. I think the authors didn’t consider the survey weight in their analysis.  
  
The references used by authors for identifying similar studies seem sporadic, low evidence from Bangladeshi papers, and most of the references are too old. There are numerous studies on this topic in Bangladesh which established several results similar to this paper, but these papers were hardly cited. Please adjust and rewrite the whole discussion related to your result and this study.

Page 11 lines 38-42: “During this study, some demographic variables are found having a significant effect on newborn care practices of using the clean delivery kit, drying, skin-to-skin contact and timing of first bath”. How they are significant, do you mention them in the result?

Page 13 lines 5-7: “The findings of this study show that the non-institutional delivery providers must be educated on harmful effects of using traditional materials on the cord stump with emphasis on essential care practices.” I didn’t find this result anywhere. Such speculations should be avoided unless can be supported by data/evidence.  
  
**Conclusion**  
  
The conclusion needs to be more specific and highlight key findings. This should support the result. Suggested to provide less discussion. As authors discuss the reason for each association in the discussion part.