Letter to Editor

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I studied the essay titled "Prevalence of Iron deficiency anemia and some related factors among pregnant women referred to healthcare centers in Bandar Lengeh, Iran, in 2015" published in the Spring of 2015 with much interest (1). In the mentioned cross-sectional study, among the 418 pregnant women who were referred to health centers in the city and had completed their pregnancy, the prevalence of iron deficiency anemia (IDA) was 22.5% in the first trimester of pregnancy and 45.9% in the third trimester of pregnancy. In addition, the authors concluded that the prevalence of IDA was undesirable, especially in the third trimester of pregnancy. Therefore, they noted that the expansion of pre-pregnancy care, increasing of mothers' knowledge of suitable diet, regular intake of supplements, birth control in older women, and appropriate pregnancy spacing seem necessary. The importance of this study is due to the significance of data on the prevalence of IDA among pregnant women in the studied area in the planning and managing of available resources for the prevention of IDA and its related complications. The attention of the journal to this topic must be praised; however, there are some points and questions regarding the mentioned study which will be briefly discussed in this text.

The first issue is the lengthy introduction section. The importance of the issue and the purpose of the study could be stated in a few short paragraphs. A detailed description of the known issues in the introduction does not seem logical (2). Regarding references 12 and 15, it would be best to provide the original references related to the World Health Organization (WHO). Moreover, for the statements "Women, from the first … count."

and "Anemia in various regions, … is not available" the original reference should be provided.

In the Materials and Methods section, the explanations regarding the geographical location and population of Bandar Lengeh requires a reference. In determining the sample size, rather than a relatively old reference related to 2001, it would be best to use a more recent reference (e.g., reference 8 or 9). Furthermore, due to the statistical population being limited and predetermined (N = 826), it would be best to use the proportion estimation formula which includes the population size (N) for the determination of sample volume (3), and to consider the amount of d as small as possible. Even if the sample size calculated through this method is similar to that obtained in the study, it is necessary to provide the readers of the article with the correct method of sample size determination. It would also be best to explain systematic random sampling so that the readers to get acquainted with the practical use of this method. In the section in which the definitions are provided, it is necessary to also provide the definition of low birth weight (with reference citation). The explanations provided regarding the use of McNemar's test are vague and inaccurate. It could simply be stated that in order to compare the prevalence of IDA in the first trimester and in the third trimester of pregnancy, McNemar's test was used.

In the section on the statistical analysis of data, considering that almost all variables reported

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in table 2 are ordinal qualitative variables and IDA is a binary outcome variable, it would be better to use chi-square test for trend in studying the relationship between the studied variables and IDA. Evidently, the percentages reported in the table should be calculated relative to the sum of rows and not to the columns (4). This will result in the correct interpretation of the results. In data analysis, the bivariate correlation between the studied variables and IDA has been assessed. The significance of bivariate correlations is not necessarily indicative of factors related to IDA, because each correlation may be affected by other confounding factors. Multiple analyses such as multiple logistic regression should be used and adjusted odds ratio (OR) and 95% confidence interval (CI) must be calculated and reported for the studied variables. The sample size (n = 418) permits the application of multiple analyses (5). Furthermore, to determine the accuracy of the fitted model, the amount of Hosmer-Lemeshow goodness of fit test and area under the receiver operating characteristic (ROC) curve must be reported; amounts closer to 1 signify the goodness of fit of the logistic regression model to the data (6).

In the results section, in tables 1 and 2, the range of the pregnancy intervals variable has not been accurately determined and different categories overlap. In table 3, the row and columns titles have been displaced; the first trimester and third trimester are not in the correct place in the table. In addition, it would be best to report the total percentage of columns to one decimal place like other percentages. It is also necessary to report the results of multiple logistic regression in the first and third trimesters in the form of a table. Considering the results of this table, the discussion of the article may be affected.

That which has been interpreted from the correlation between qualitative ordinal variables (such as pregnancy intervals, number of pregnancies, and pregnancy rank) and IDA cannot be inferred from the percentages calculated in table 2 (calculated relative to the

sum of columns). As previously stated, the total percentages of the table should be calculated relative to the sum of rows to clearly represent the trend of variation in IDA prevalence in the ordinal qualitative variables. Calculation of total percentages relative to the sum of rows presents contrary results to that of the study!

It would also be better to report the association of the variables of age, ethnicity, and number of healthcare services receives with IDA in the third trimester like the first trimester.

In the Discussion section, the statement "In general, various studies….was between 12% and 43%." requires reference citation. The finding of "a lower incidence of IDA….number of pregnancies" can only be approved or rejected when the percentages reported in table 2 is calculated relative to the sum of rows and not to columns. In fact, the calculation of the percentages relative to the sum of rows presents contrary results to that reported in the study! Other instances in which the results have not been interpreted with the necessary precision can be observed in the discussion and abstract.

As the Conclusion must be based on the results obtained in the study, and considering the alteration in some of the important findings of the study, it is clear that the recommendations made in the Conclusion section must be revised. However, it seems that recommendations such as regular consumption of supplements and contraception of older women cannot be inferred from the results of this study!

Moreover, it seems necessary to act according to the recommendations of Rezaeian and other researchers, "The repeated reviewing process of the first draft must be performed by all authors of the article and they must, in addition to increasing the scientific weight of the article, resolve its possible issues and eliminate unnecessary explanations in each stage of reviewing." (7, 8), in the editing of an article.

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