Reviewer’s report

Title: Motivational factors for blood donation, potential barriers, and knowledge about blood donation in first-time and repeat blood donors

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Reviewer: Edson Zangiacomi Martinez

Reviewer’s report:

Introduction. The introduction describes a comprehensive scenario of the blood donation in Ghana and provides to the reader interesting data on the problems due to low rates of blood donation in this country. This section justifies that the motivators and deterrents of blood donors must be understood. I recommend this section for publication in this present form.

Methods. Page 7, line 144. The notation n is appropriate to denote sample sizes. I think the authors can use, for example: The questionnaire assessed the following four categories: Socio demographic characteristics of participants (7 items), motivators of blood donation (6 items), deterrents to blood donation (9 items), and knowledge about blood donation (5 items).

Methods. Page 8, line 156. In the phrase: For descriptive 157 statistics, frequency, percentage, mean, and standard deviation were computed. Please, insert (SD) after standard deviation: For descriptive 157 statistics, frequency, percentage, mean, and standard deviation (SD) were computed. Note that SD is used, for example, in page 9, line 179.

Methods. Page 8, line 163. The phrase: P values ≤ 0.05 were considered statistically significant. It would be better written in this way: The significance level was set at 0.05.

Methods. Participant's knowledge about blood donation was assessed on five knowledge questions. The authors should explain as these questions were chosen. See, for example, the motivations of the questionnaire developed by Zucoloto & Martinez (Revista Brasileira de Hematologia e Hemoterapia 2016, 38(2), 175-177).

Methods, page 8. Overall knowledge score of 0-3 was categorized as inadequate knowledge while a total knowledge score of 4 or 5 was categorized as adequate knowledge. Please explain how this rating was determined.

Results. All percentages should be reported with one decimal place.

Results. For example, consider the phrase "Of the donors in the age range of 20-35 years, 137(55.69%) were first time donors and 109(44.31%) were repeat donors" (page 9, line 189). Because these percentages are complementary, it is sufficient consider: "Of the donors in the age range of 20-35 years, 137 (55.7%) were first time donors". Please, check for other similar problems in the manuscript.
Results. Page 9, line 192: "The analyses show no significant association ($\chi^2=6.4731$, $p=0.092$) between donor status and age of the participants". The p-value lower than 0.05 is only an effect of the sample size. It is obvious that there are more repeated donors among the older donors, but the sample size was not large enough to detect this effect. Therefore, the concept of "statistical significance" should not be so valued in the interpretation of the results presented in Table 6 and this section should be reviewed.

Results. In this section, Table 6 is discussed previously to the Table 3. The authors should rearrange the order of the tables.

Results. Table 3. The variable "When someone I know is in need" seems to be very similar to the variable "To help a person in need". Please, explain the difference between them.

Results. Table 7 is very interesting, but the interpretation of the results is limited because of the exaggerated belief in the concept of statistical significance (lines 219 to 235). The authors should be concerned to observe what best characterizes each group, without so much emphasis on statistical significance. In addition, this phrase is not technically correct: "The difference was statistically insignificant" (page 12, line 223).

Results. In many times, the text of this section is just a repetition of the contents of the tables. The authors maintain this style throughout, which made the article very tedious to read at times. The results section should highlight the most important findings, without the coldness of focusing in statistical significance.

Conclusion: Page 25, line 405: "More than half of the participants demonstrated inadequate knowledge about blood donation". The authors should be able to discuss whether the set of issues that define knowledge are valid and sufficient for this purpose. Knowledge is a fairly comprehensive concept, the article is not convincing if these five questions are appropriate to measure knowledge.

Conclusion. Page 25, line 402. "Poor attitude of staff, level of privacy provided during pre-donation screening and the concern that donated blood may be sold to patients in need of blood were identified as the three key deterrents to blood donation in this study". I think these items are perceptions of the blood donors, but they do not should be interpreted necessarily as deterrents to blood donation. Blood donors may believe that it would be advantageous to receive some benefit when donating blood, but that does not mean they will stop donating if they do not receive rewards. The article can report these results as "self-reported barriers", but these aspects are not necessarily deterrents.

Conclusion. Page 25, line 406. "Community education on blood donation should be intensified to increase awareness of the need to donate. Effective communication, counselling, and friendly attitude of staff have the potential to motivate donors and eliminate barriers to blood donation". These aspects are obvious. Authors should describe how the study findings might contribute to this.

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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No

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