

Please provide a comprehensive and integrated review of this manuscript.
Be sure to present a balanced view of the manuscript's strengths and weaknesses.

This manuscript reports an interesting study of inactivity and under-nutrition following acute stroke. The study certainly has relevance for nursing even if the findings are not immediately applicable. The study appears to have been conducted carefully and has relevant findings. Nevertheless, there are a few areas that need attention:

- The purpose stated in the Abstract is succinct and clearly articulates the purpose of the study. Less well stated purpose statements appear on p. 6 and again on p. 14. One statement of the purpose needs to be used throughout.
- Since it is difficult to sort out what was compared to what in both the Results and Discussion sections, some specific aims or hypotheses need to be added to the statement of the purpose, explicitly detailing which comparisons will be made. These could be repeated in the Results section, each one followed by the analysis which answers that Specific aim. Likewise, the Discussion would be clearer if it was organized in the same manner.
- A physiological rationale needs to be added which explains the physiological relationships among the variables, e.g., how do cerebral ischemia and nutrition differentially and in combination affect each of the dependent variables
- In the section on Experimental Design, there needs to be a more complete explanation of the design, i.e., justification for having included the underfed but non-sham operated group.
- On p. 7, it is unclear how a probe is made from suture. The term, "probe," generally refers to a rigid object and suture certainly is not rigid.
- In the Data Analysis section, it is not clear what was compared to what. In the Results section, certain comparisons were or were not statistically significant, but in the Data Analysis section it is stated only that Kruskal Wallis would be used. What are the between and within group comparisons?
- In the Results section differences between "affected" and "non-affected" are reported, but there was no statement in the Methods that affected and non-affected legs would be compared. An explanation of these comparisons needs to be part of the design.
- The Discussion section needs to re-state each of the Specific Aims or hypotheses and then indicate clearly what was found in relation to that Aim or if the hypothesis was or was not supported.
- On p. 18, l 7&8, this sentence does not make sense.
- On p. 19, l 2 & 13, what does it mean that nurses "should play a central role"?
- Also on p. 19, l 2&11 refer to inactivity. Inactivity was not a variable in this study and no measure of activity was reported.
- Muscle atrophy also is reported. What is the definition of atrophy in the context of the muscle variables that were measured in this study?
- Figure 1 is superfluous, since the information is clearly stated in the text.
- Figure 2, There are abbreviations on the figure that are not defined.

Rev 2

This is a very well done study and report. However, it can be condensed and some verbage removed to make it a little easier to read and understand. The results and discussion sections need to be written more clearly and succintly. Underlined words below are only to indicate the change made and are not for emphasis.

Abstract, results: Delete p values and give text, significantly increased or decreased compared to controls. In the last line of results, insert control group values so not confuse with baseline values.

Introduction, line 1: ...1995). Stroke is the
Line 8: survival rate is increasing.

Line 12: ..ischemia on skeletal muscle that may.....

Line 16: related to disuse of reduced neurologic..

Page 6, take out last sentence. Finish the idea of muscle fiber changes before introduce nutritional effects. There is a lot of detail in the paragraph starting with In humans and should be distilled down, especially since some of the references are very old. Then have new paragraph, Another potential factor contributing to muscle loss following stroke....

Last line: Genis, 1996) are under nourished.

Page 7, lines 5-13: much of this material should be summarized. They are all human studies, and all show loss of type II fibers.

Line 13 (rat model) should begin new paragraph as the next paragraph on page 8 is still rat model findings.

I do not think you need **Figure 1** for the experimental design as it is not complicated.

Only the right part of **Figure 2** is needed.

Page 13, Data Analysis. Please have a statistician help with this section. State what the Kruskal Wallis test is and why you are not using a parametric anova? It would seem you could use a oneway anova (3 independent groups) and a post hoc test to see which groups differ from which. You may have done that, but is unclear with all these p values. Since you stated $p < .05$ was set as level of significance, do not need all these p values, just $p < .05$. The statistician could also help with the write up in Results section

Results, line 3: these percentiles do not match Table 1, so not sure if comparing each group to its own baseline, or to controls on day 7.

Page 14 and Table 3, For each muscle, is the UndN group different from control, or just the S group? The same question holds for Table 4. The text on page 14 is unclear on this

issue (differences between controls and UndN), other than UndN were not different from S.

Page 15: It looks like no differences between S and C, C and U, and S and U. Why not just say no effect of stroke or undernutrition on x and y of gastroc?

I also finding it confusing to keep talking about the affected and unaffected, when they were never different from each other. Were they analyzed separately?

On page 16 you again state the Und was not different from S, but do not say how Und compared to controls. Looks like no significant differences? By the time I got through with this page, I knew there were significant effects of stroke on some dependent variables in some, BUT NOT ALL, muscles, though I could not tell you which ones without going to the tables. And those were hard to read. So do be careful that in the Discussion your findings are specific to what you did find (which muscles, which outcome) and not general.

Page 16, Discussion: Based on earlier studies (refs here) we hypothesized that muscle wasting would be due to denervation. However, we found that similar decreases in muscle characteristics were noted in both the affected and unaffected (which muscles were significant different from control???), suggesting that ...

There are lots of studies cited in the discussion that are not clearly tied to the findings of the present study. Needs to be tightened up so the reader can follow the main idea of each paragraph.

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A well-written and interesting manuscript approaching an important problem from an angle that most of us as nurses do not know much about!

The results need to be made a little bit more user friendly; too many numbers – bar graphs might better illustrate the differences.

I suggest a title change – you want people to read this and learn something and think about doing basic science work in their own field. Something like Effect of Inactivity and Undernutrition following Acute Stroke in a Rat Model. Once people see all the other stuff they would be less likely to read

For Table 1 – these changes would be nicely shown with line graph – did you try anacova – clearly the trends are different in the 3 groups?

In results, discussion and abstract you keep referring to decreases in muscle weights and protein content, etc. This is not correct as it does not appear that you measured these things at baseline. They are different from one another. It is difficult to believe that some of the undernourished results were not different from the control. They appear similar to stroke group. Although you were correct in using nonparametric tests, often even with small samples in experimental studies people will use anova and then linear contrast for individual comparisons. I think it is worth a try if you haven't done so already. It is essential for you to conclude about the effects of undernutrition vs stroke and right now this is not clear.