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Analytical Overview of Studies Exploring the Benefits One Can Reap From Exercise

Did you know that exercise can significantly impact your level of fitness and the health of your heart? Engaging in regular physical activity can help you maintain a healthy weight, reduce the risk of chronic diseases, and improve cardiovascular function. The Lab reports I chose to cover this topic and how several factors can affect heart health. The first lab report is "Cardiorespiratory fitness, body ... in men" by Lee et al, which takes healthy people from the US with no previous heart issues and records factors ranging from the level of fitness to age and height. They then wait an average of 8 years and record how many men died and due to what factors. The second one is "Exercise-induced ST ... meta-analysis" by Gianrossi et al, in which researchers reviewed 147 reports on exercise-induced ST depression with coronary angiography to come up with their own conclusion on the topic. The third one is "Exercise-based cardiac ... heart disease" by Anderson et al, where the authors looked for different studies that tested the effectiveness and cost-effectiveness of exercise-based cardiac rehabilitation rather than the traditional treatment for Coronary heart disease, and came to a conclusion based on that in this report. Laboratory reports serve as a crucial means of communicating experimental findings and their significance. However, the format of these reports can vary depending on the targeted audience and the specific requirements of the experiment. In this essay, we will compare the formats of three laboratory reports and analyze their strengths and weaknesses. All these lab reports were all exceptionally well-done, however, one stood out from the rest: the first one I

mentioned, "Cardiorespiratory fitness, body ... in men", was brief, or in other words, avoided including an insurmountable of information, organized the information/ graphs well, and explained terms and showed the different equations used to calculate pieces of data; unlike the second one, "Exercise-based cardiac ... heart disease", while being well structure it contained much extraneous info that was overwhelming; and the final one, "Exercise-induced ST ... meta-analysis", which was below the rest because it doesn't give any background information about the subject before talking about it, jumping right into the topic.

The first report, "Cardiorespiratory fitness, body...in men," is ranked highest for its use of rhetorical strategies to properly introduce the topic to the reader, allowing them to understand the lab report. Unlike the other reports, Lee et al explains certain concepts that not all readers may know about and explains the purpose of the lab report rather than analyzing the data. An example of this is shown when the author says, "Another unexplored methodologic limitation in obesity research is that body mass index (BMI; in kg/m²) is commonly used to examine the obesity-mortality association even though BMI is not an accurate measure of obesity. Rather, it mainly indicates overweight for height but does not discriminate between fat mass and fat-free mass (FFM)" (Lee, 2011, p. 1). Here, the authors explain what BMI is and the weakness of measuring whether a person is obese or not based on this metric, providing the foundation for how they analyze and present their data. Lee also includes the formula they used to calculate Fat mass and FFM on page two of the lab report (Lee, 2011, p. 2). This rhetorical strategy of defining shows the importance of the topic and makes it more accessible to some who may not follow the topic. Additionally, the authors make it easy to differentiate between different topics by providing clear and bolded titles for each section. This is best displayed on page one where sections such as keywords are bolded and in all capital, making the lab report very easy to

differentiate between different topics by providing clear and bolded titles for each section. This is best displayed on page one where sections such as keywords are bolded and in all capital, making the lab report very easy to navigate (Lee, 2011, p. 1). Adding a keywords section makes the lab report more accessible to readers. All of these factors combined make this lab report the best out of the three.

The next report, "Exercise-based cardiac ... heart disease," is ranked as the second among the three due to its structure, but the amount of information in the lab report is overwhelming and hard to understand. The structure is best displayed on page 9 of the lab report (Anderson, 2016, p. 9). On this page, each topic is bolded and capitalized, and this lab report is one of the only lab reports that included bullet points, making it very easy to navigate and read. Despite being structured well, it fails to explain certain terms, making it hard for someone not well-informed about the topic to understand. An example of this is shown on page three of the lab report when Anderson said, "The study population comprised men and women of all ages who have had a myocardial infarction (MI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI), or who have angina pectoris, or coronary artery disease" (Anderson, 2016, p. 9). Here, Anderson explains how the study subjects are, without defining any of the terms, catering to people who already know a lot about the topic. I suggest doing something similar to what the first lab report did, where they included a keyword section so the reader would know what terms they should look up beforehand or define the words beforehand. This, as well as the fact that the lab report is 198 pages, makes it overwhelming at first, and the author should condense the information to make it less overwhelming and more readable.

The final report, "Exercise-induced ST ... artery disease," is ranked last because, unlike the other two reports, this lab report jumps right into the topic without providing any background

information. The lab report begins by saying, “To evaluate the variability in the reported diagnostic accuracy of the exercise electrocardiogram, we applied meta-analysis to 147 consecutively published reports comparing exercise-induced ST depression with coronary angiography” (Gianrossi, 1989, p. 1). As you can see, the lab report immediately delves into the subject without defining any terms or explaining why the topic is important. This approach makes it difficult for the reader to understand and connect with the topic. Additionally, the introduction is a large block of bold text with data and statistics (page one), making it hard for an uneducated reader to begin reading about exercise-induced ST in the diagnosis of coronary artery disease. Despite this, one positive aspect of the lab report is that it outlines the limitations of this meta-review. To quote the lab report, “The first involves the large quantity of missing data in the scientific literature reviewed. The second, mathematically related problem involves certain realities of stepwise regression” (Gianrossi, 1989, p. 7). By highlighting the limitations, the author, Gianrossi et al, emphasizes the importance of funding and pushing for more research, showing how important research on the heart is.

In conclusion, laboratory reports can vary significantly in format, catering to different audiences and experiment requirements. The three reports analyzed in this essay show different strengths and weaknesses. While "Exercise-based ... heart disease" can be hard to digest, a really clear and easy-to-navigate structure. "Exercise-induced ST ... artery disease" is not easily understandable for people who are not familiar with the field, but it describes limitations with the analysis, emphasizing a need for more data. Finally, "Cardiorespiratory fitness, body ... in men" presents information in a way that is easy to understand, includes helpful tables and graphs, and is brief. By comparing these reports, readers can better understand how different formats can impact the readability and accessibility of experimental findings.

References

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