Analysis of Three Lab Reports About Major Depression Disorder

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Look around you. One out of every ten individuals is suffering from a major depressive disorder (MDD) in the United States alone. As a society, it is important to focus on these prevalent problems that disrupt the lives of millions of Americans daily. MDD is a mental disorder that has no direct "cure" but is rather treated with therapeutic sessions, medications, and exercises which greatly discourages any researchers from even approaching this field, as they know this will likely end in a dead end. But, these three lab reports; "Association Between Placebo-Activated Neural Systems and Antidepressant Responses"(Placebo vs. Antidepressant), "Effects of Antipsychotic Medication on Brain Structure in Patients With Major Depressive Disorder and Psychotic Features"(Effects of Antipsychotic Medication), and "The effects of Varenicline, Bupropion, Nicotine Patch, and Placebo on Smoking Cessation Among Smokers With Major Depression: A Randomized Clinical Trial" (Effects of Varenicline) by Marta Peciña, MD, PhD et al, Aristotle N. Voineskos, MD, PhD et al, and Paul M. Cinciripini et al, respectively, successfully tackle issues related to MDD. Despite the complex, perplexing nature of MDD, all three lab reports presented their information related to major depression disorder effectively and cohesively; however, the lab report of "Effects of Antipsychotic Medication" when compared to "Effects of Varenicline" and "Placebo vs. Antidepressant" most successfully leave the readers with a sense of closure through its clear and concise writing that give the audience a general understanding of how societies around the world will be able to tackle the plaguing issue of MDD.

In the lab report "Effects of Antipsychotic Medication", the authors of this study identify the problem that they are tackling most transparently and provide their contribution in assessing and tackling this problem. With a succinct and straightforward objective of the lab report; "To

assess the effects of antipsychotics on brain structure in humans" (Voineskos et al 2020), simple, yet varied jargon is used throughout this lab report to allow for the lab report to be read by as many readers as possible. The introduction of this lab report logically and efficiently identifies a problem for its readers which is the fact that the risks of antipsychotic medications is unknown on individuals with MDD, with a directly labeled hypothesis, "We hypothesized that patients in the olanzapine group would demonstrate cortical thinning throughout all lobes but would demonstrate little or no change in surface area or subcortical volume, with the exception of striatal volume increase" (Voineskos et al 2020). The authors then dive into the methods of this study, where, with clearly labeled sections, describe the "Design", "Participants", Scanning and Analysis of MRI Data Collected", and "Statistical Analysis". In the "Participants" section, the authors of the lab report identify the participants that were part of this study. Part of the criteria for these participants, is for them to have decreased depressive symptoms during the stabilization period of the study, where they would have to have a "Mini-Mental State Examination score of at least 24" (Voineskos et al 2020). What is the Mini-Mental State Examination? Using footnotes, the authors of this lab report provided a neat and direct definition of this examination; "a practical method for grading the cognitive state of patients for the clinician" (Voineskos et al 2020). With the results of the experiment, the authors provide charts, tables, diagrams, and graphs, all of which are clearly labeled and captioned, providing an explanation to what each of the figure represents, in addition to any abbreviations that are used. To cover all aspects of the results, the authors of this study provided addition subsections within the results section to go over "Outcome Measures", "Effects in Older Participants", Exploratory Analysis", and most importantly the "Post Hoc Analysis". The analysis of the results comes in the "Discussion", where Voineskos et al describes his findings from the results in terms that even if a reader

skipped all other sections of the lab report to the "Discussion", the reader would understand the key takeaway from this experiment; "both olanzapine and illness relapse have an effect on brain structure" (Voineskos et al 2020). In addition to that, the authors clearly list the limitations and areas to improve of the experiment. The lab report is concluded with a short conclusion that suggests "predictive model of which patients require long-term treatment with antipsychotics and which patients can safely discontinue them" (Voineskos et al 2020) for future studies to continue in.

Moving on to the "Placebo vs. Antidepressant" by Marta Peciña et al, the authors include an objective, but, unlike the lab report "Effects of Antipsychotic Medication", it contains some verbiage that weaken the objective and sway the reader's understanding of the purpose of the study. The objective starts out with the words "Here we", which are filler words that serve no purpose for conveying the main point of the lab report. Similar to "Effects of Antipsychotic Medication", this lab report contains a well thought out introduction that offers background information about the topic with a clearly labeled hypothesis; "We hypothesized that placebo-induced improvement in depressive symptoms would be associated with the capacity to activate endogenous MOR mediated neurotransmission in brain areas involved in stress and mood regulation" (Peciña et al 2016). The introduction, however, overwhelms the reader with over five complicated terms and their abbreviations for the reader to follow along throughout the study. This makes this study especially unfriendly towards readers that are unfamiliar with these terminologies. Throughout the methodology, this lab report does a great job in describing the methodology and the specific tasks that are done within each step. Unlike the first lab report, this lab report uses numbered steps to describe the order in which the procedure is done on each of the participants, making it easier for the readers to follow. But, different from "Effects of

Antipsychotic Medication", this lab report fails to use subheadings throughout the methodology section, overwhelming the reader with a lot of writing to follow. Proceeding to the results, readers can already spot a major difference between this lab report and "Effects of Antipsychotic Medication"; a lack of figures. The authors of this lab report decided to integrate some of the results they found within their writing. For examples, when explaining the significant reduction in the average PIDS scores, the writers of this lab report stated, in paragraph form, "(PIDS active i.v. = 42 ± 26; PIDS no i.v. = 49 ± 22.4; F= 4.3, p= 0.04)" (Peciña et al 2016). Data, no matter what the subject is, is mostly easier to read and visualize when implemented within tables, graphs, and figures, rather than simply words. One main issue that is to be noted in this lab report, is the lack of a "Limitations" section in the discussion and the conclusion. No matter how perfect a study can be, there will always be limitations. A lack of a section acknowledging where the lab report falls short creates a lack of transparency between the reader and the authors, and even points to the lack of reliability of this lab report.

The last lab report that will be discussed is "Effects of Varenicline" by Paul M. Cinciripini where the authors evaluate the "safety and efficacy of smoking cessation pharmacotherapy among smokers with MDD" (Cinciripini et al 2022) as stated in the objective. Just like "Effects of Antipsychotic Medication", this lab report has a clear and precise objective that effectively conveys the purpose of the article. Moving to the introduction, the authors establish the background information along with an issue, "smoking rates among those with MDD were 1.5 times higher than those without MDD" (Cinciripini et al 2022), which give the research that they will proceed to complete through their lab report a valid and authentic purpose. Similar to the first lab report, this lab report includes subheadings within the methodology section, making it much more simpler for readers to follow, thus, allowing for a wider range of

audience to be able to read the lab report. In the results section, a similar issue to “Placebo vs. Antidepressant” arises in this lab report; a lack of figures. Compared to the first lab report, this lab report only has three figures integrated within the results section, while the first one has five. Throughout the discussion, the readers can notice the use of complex jargon that were never clarified from the beginning of the lab report. For example, the lab report uses the term “NPSAE” which stands for “Neuropsychiatric Adverse Event” without ever defining the parameters for these neuropsychiatric adverse events for the readers, making it more unclear. A strength that is present within this study that is missing from the other two studies, is the fact that the conclusion of this study leaves the reader with a clear takeaway from this lab report after testing the different medications with MDD patients, “Results suggest that varenicline plus behavioral counseling may be the best treatment option for MDD smokers” (Cinciripini et al 2022).

From these lab reports, it is evident that MDD is a significant mental health issue that impacts a large portion of the population. The three lab reports that were analyzed provide valuable insights into the treatment and management of MDD. Each lab report presents its information effectively and cohesively, but the lab report “Effects of Antipsychotic Medication” stands out as the most successful in providing readers with a clear understanding of how society can tackle the issue of MDD. It is imperative that societies throughout the world prioritize research and resources to address the prevalence of MDD and other mental health issues.

References

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